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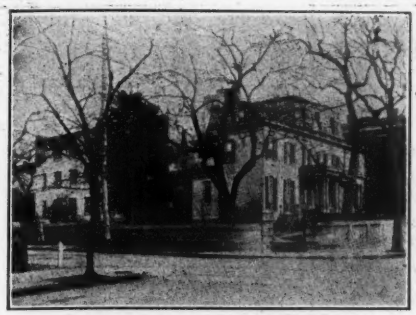

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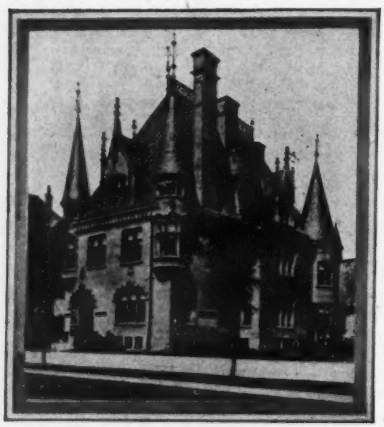

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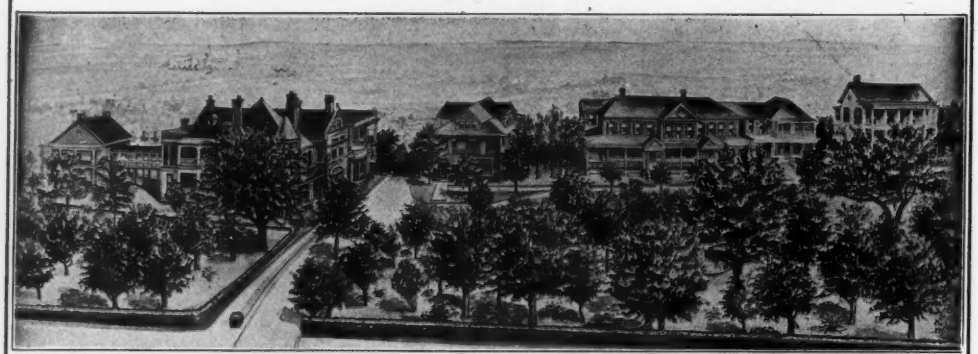

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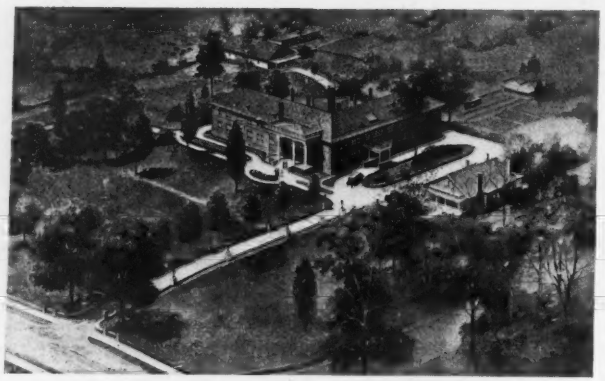

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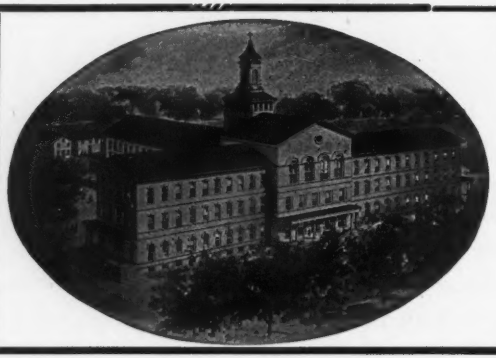

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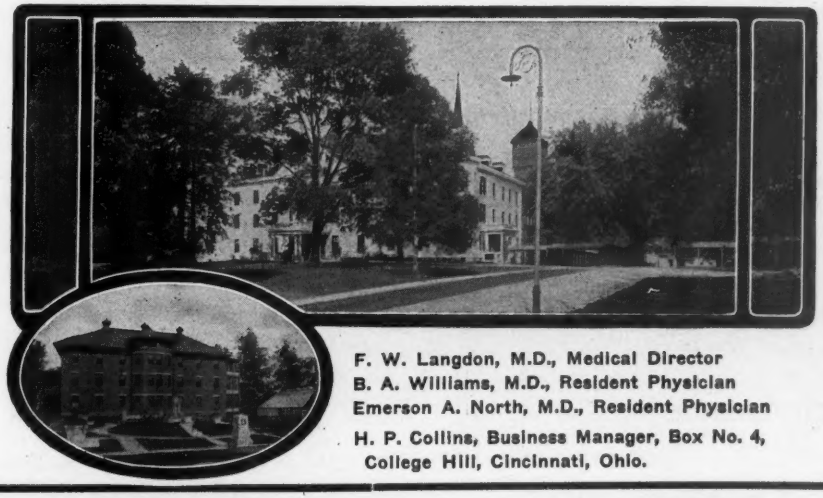

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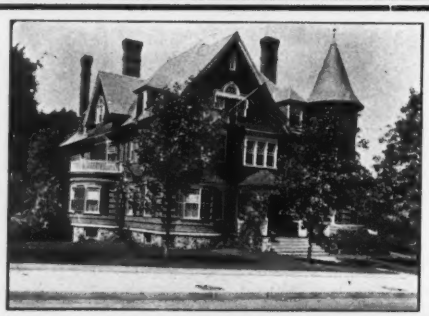

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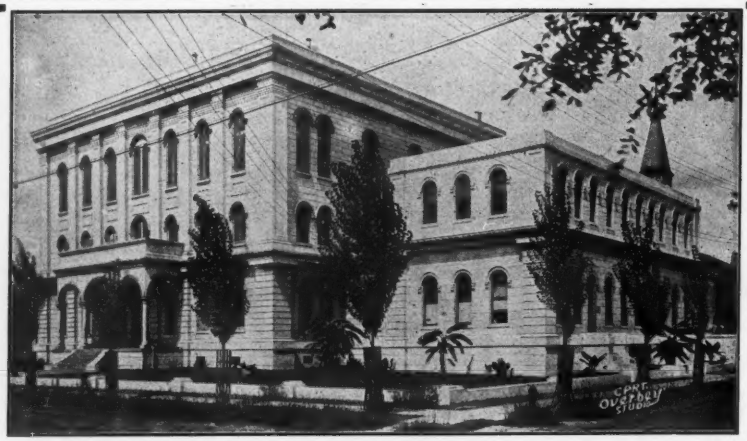

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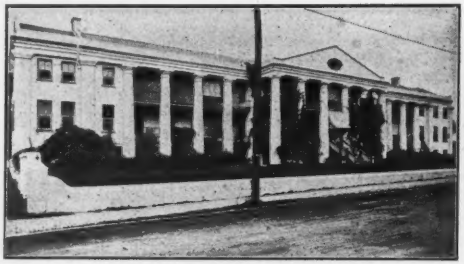

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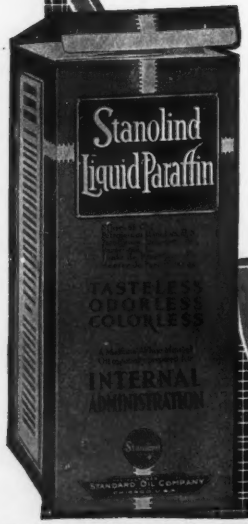

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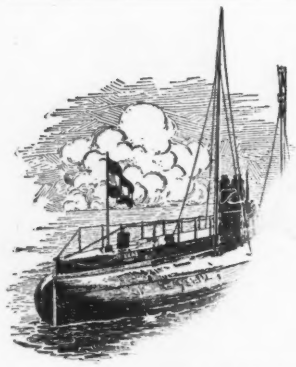

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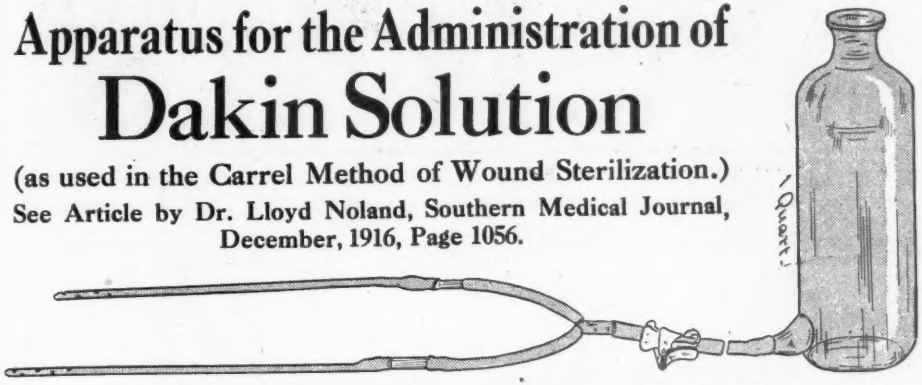

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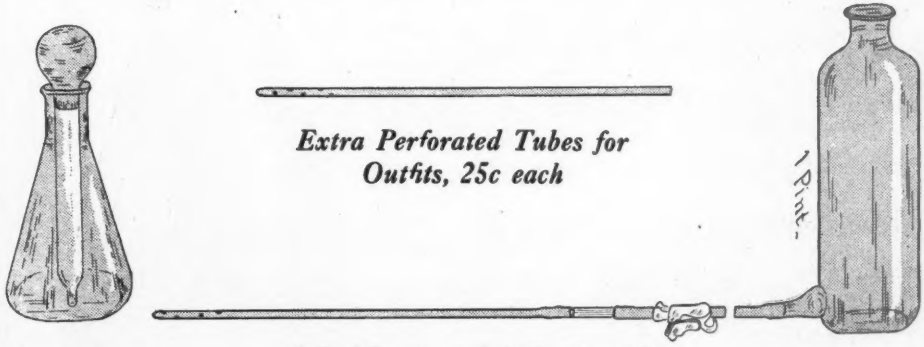

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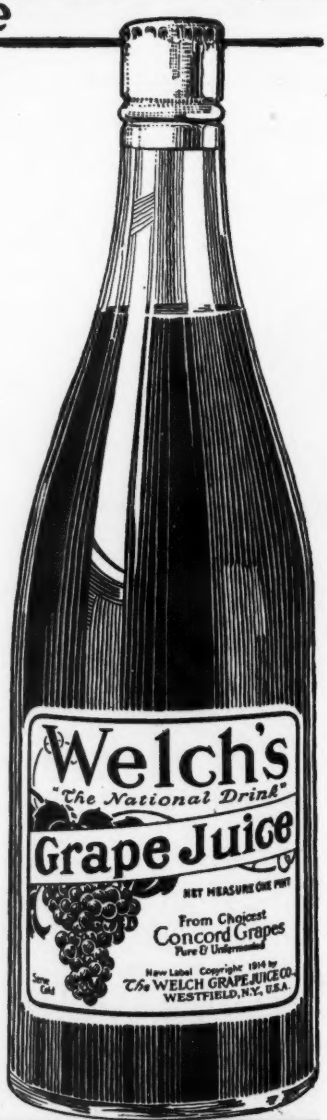

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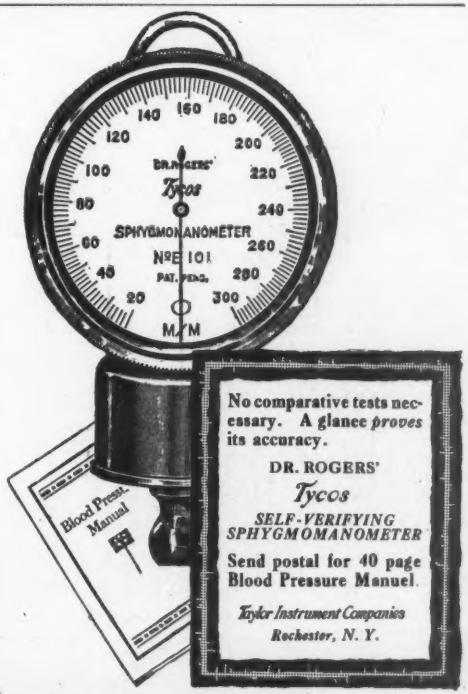

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SPECIAL ARTICLES

CUI BONO—THE DOCTOR AND HIS IDEALS*

By M. L. Graves, M.D.,
Galveston, Tex.

The physicians of our Southern states and many from other sections of our common country gather in this beautiful and progressive city of the Southland to pour out their libations to the Goddess of Health, to renew their faith and to pledge unceasing warfare upon disease and unnecessary and premature death.

Addressing as I do an audience composed of laymen and physicians, it may not be inappropriate to utilize the time assigned me to review some of the principles for which my profession stands, and to recall to the popular mind the ideals animating medical men, and to revive in your memory, my colleagues, the inspiration of those ideals and to remind you of the rewards of your lives of devotion and usefulness.

Often have I been pained and disappointed to feel that the profession that has always been foremost to spend and be spent in the service of humanity has received no greater civic honor or public recognition. No laurel wreath or glittering crown has ever been awarded to the devoted followers of the son of Apollo and Coronis. Even history, that serene and sedate record of human events, has signally failed to accord to Hippocrates and his disciples their proper place in human annals.

Poetry, too divine for the contemplation of ordinary verities, and, inspired of that genius next of kin to degeneracy, has failed to fan its muse into a flame upon the commonplace virtues and attributes of the doctor of medicine. Shakespeare, the greatest of poets, evinces a profound knowledge of medicine and surgery, and even insanity; but his doctors are all weaklings, and too frequently puppets. In Hamlet, Macbeth and King Lear the doctor is in evidence and throughout the play you catch glimpses of the poet's knowledge of medicine, but the doctor is not the messenger of his information.

Fiction, also unmindful of its obligation, seems never to have realized the dignity of medicine. Glance at Dickens, Thackeray, Scott, Bulwer, Hugo and others, and nowhere do you find a just appreciation of your arduous labors. You are represented by Doctors Slammer, Jobling and Downward, and these very names seem to typify the litterateur's conception of your character and calling. At present I can only recall three authors who have the correct conception of your work and worth or the spirit that animates your efforts. One of these is George Eliot, who, in "Middlemarch," has given us a good portrait of the earnest, active, aggressive and scientific doctor in the person of Frank Lydgate. Next I remember Dr. Weir Mitchell's characterization of Dr. North in a scientific spirit, and in Ian MacLaren's "Doctor of the Old School" we have the enduring and beautiful memory of the old family doctor, now fast fading from the fireside, in his delineation of Dr. Weelum MacLure, perhaps not quite up to date, but with a fund of common sense, and a genuine love of his calling and his race, which inspires the heart of every follower of Aesculapius.

The stage, that mirror of human activities, is a stranger to the real, true and competent doctor. Never have I seen a

*Oration on Medicine, Southern Medical Association, Tenth Annual Meeting, Atlanta, Ga., Nov. 13-16, 1916.

play wherein a physician held a character that was not a comedy of errors, or a farce comedy, in which the doctor was the comedy, and his conduct and treatment the farce.

None of our large public parks bears the names of doctors, and few granite shafts and bronze statues recall the deeds and memorialize the valor of the guardians of the people's health. Statesmen, soldiers, sailors, poets, scientists, orators, lawyers and ministers are kept alive by public statues. Even our National Hall of Statuary in Washington has nowhere a remembered recognition of the profession of medicine, though a shoemaker has a place among its immortals. Our National Congress, though often appealed to, has never yet considered the lives and health of 100,000,000 people of this republic and their chosen guardians of sufficient importance to occupy a seat in the national counsels, although law and labor, acres and agriculture, pensions and postoffices have their especially appointed protectors.

But if age lends respectability to character, and furnishes forth dignity to calling, then, indeed, the medical profession need not blush for ancestry or tremble for its escutcheon. Long years before modern time had its authenticated record your prototypes were modestly relieving human suffering. Forty-five hundred years before the Great Physician Himself raised Lazarus from the dead, or cured the palsied man, or restored the blinded eyes through Siloam's waters, Iemhetep, the first recorded physician who secured fame and fortune, and served the third dynasty of the Pharaohs, started our great healing science on its career of usefulness. Strangely enough, his name means "he who cometh in peace," and he is, therefore, justly entitled to be a medical forerunner of that great Healer of bodies and of souls who came to bring peace on earth and good will to men. Before theology had formulated its creeds, medicine was ordained of heaven, and the doctor "had been appointed by Almighty God to stand for a fact," and that stupendous fact was humble and sincere service to humanity.

Then why should we seek to perpetuate fame by the gaudy tinsel of granite monuments or brazen tablets? Today I ask your attention as I portray to you "The Doctor and His Ideals."

And what is the doctor? Shall we agree with the Frenchman whose ready wit characterized him as a "man who pours medicine of which he knows little into bodies of which he knows less," or shall we agree with the Christian Scientist that "he is simply an error of mortal mind"—indeed, the most colossal error that has ever crossed the threshold of human experience? Or shall we rather conclude, as Emerson did of the gentleman, that "he is a man of truth, lord of his own actions and expressing that lordship in his behavior, not in any manner dependent and servile either upon persons or opinions or possessions. Beyond this, manhood first, and then gentleness."

The doctor understands full well that

> "There is no great and no small,
> To the soul that maketh all."

What are his ideals? Recognizing ideal not merely as existing in idea, but as embodying a just conception of general excellence and a standard or model of perfection, let me submit that the true doctor, and I speak for no other, stands:

First for truth,—truth in the abstract and in the concrete, truth in theory and in practice. He stands for the eternal verities of human nature against all the abstractions of philosophy and the alluring mysteries of occultism. He believes that honesty is the correct principle, hence he does not advertise. He apprehends that fidelity is a cardinal virtue; therefore he does not falter where duty calls. He realizes that constancy is a constituent factor in truth, and hence is faithful to every trust. He understands that a glance of the eye, a shrug of the shoulders, an approving nod to well-directed criticism may act and mean and fasten a falsehood. Hence he spurns the black arts of deception and slander. He knows full well the professional spirit abhors a lie as nature does a vacuum, and hence no flaming poster or double-headed columns in the daily press announce his wonderful discoveries and his marvelous cures.

Secondly, he stands for charity,—charity in its broadest significance, true benevolence and genuine beneficence, ear-

nest well-wishing and active well-doing. It is not merely in service, but in dollars and cents. And if we believe with Emerson that the only real gift is a "portion of thyself," I am sure the doctor has laid his highest offering upon the altar of charity. With open hand and heart, he ministers to the afflicted. With sympathy active and alert, day by day and night after night his ministrations are commanded by the indigent. In public calamities, in widespread epidemics, upon boards of health and similar duties, he gives his time and himself, like the gospel of Jesus, "freely, without money and without price." But what is to be said of that broader charity that "vaunteth not itself unseemly" and refuseth to make merchandise of medical science and the preservation of human life?

Whenever Edison invents an electric lamp he secures a patent and enriches himself. Whenever Marconi perfects wireless telegraphy he organizes a gigantic company and sells its service, but not its secret. But what of the true doctor? Does commercialism ever crush his scientific spirit or lessen the stream of charity as it flows from his busy life?

When old Crawford Long, of Georgia, and Wells and Morton, of Massachusetts, discovered the anesthetic effects of chloroform and ether, did they rush to Washington and secure a patent to sell relief to suffering humanity? Did they seek to commercialize for mere money the relief of agonizing maternity as it groaned in travail? Did they believe that "business is business" and "look out for No. 1?" were proverbs to supersede the Golden Rule and coin into private wealth the pain and anguish of multiplied millions of human beings? No; like the quality of mercy, their generous spirit was not strained, and their colossal gift to humanity dropped like the gentle rain from heaven—twice blessed—upon those that gave and upon those that received.

Did William Jenner, stumbling upon the enormous fact of vaccination as a preventive of that dreadful scourge, smallpox, organize a company and wring tribute from dying humanity? Nay, verily. He opened wide the doors of knowledge and gave to the civilized world his wonderful discovery.

Did Sir Joseph Lister hoard the secret of asepsis and antisepsis in the treatment of surgical wounds, and pile up a large fortune in the marts of commerce? No; like the true scientist and charitable physician, his interest in humanity prompted him to give his important discovery to the world, to be used everywhere for suffering men and women.

Did Sir Almoth E. Wright, inspired by Elie Metchnikoff's demonstration of phagocytosis, formulate a commercial vaccinotherapy and found a corporation to sell secret solutions of dead bacteria to the suffering sick? No, he gave to the world his theory and its practical application to typhoid in the South African War, and today his wonderful work goes marching on in millions of dollars saved in unnecessary illness and in multiplied human lives preserved to family and society.

Did Robert Koch, Germany's grand old doctor, when he discovered, in an obscure village of Germany, the cause of tuberculosis, did he syndicate science and serve it to the public for money? No; with earnest desire to benefit his fellows, he published his discovery throughout the civilized world that all,—rich and poor, great and small,—might have the benefit.

Did Major Reed, of the United States Army,—who martyred his young life to science in Cuba to stamp out yellow fever, — did he seek to commercialize his great discovery and enrich himself? No; he hastened to announce the information gained to the medical profession throughout the world. But why multiply examples? The world is familiar with, but strangely unmoved by, these heroic deeds. What signify marble columns and glittering brass beside deeds like these? What gigantic bank account or commercial organization can compare in its blessings to humanity? Let millionaires multiply 'till they are thick as autumn leaves in Vallambrosa; let selfishness and greed and predatory wealth organize every industry into a trust; and let every common necessity of human life fall within the conscienceless grasp of monopoly; but never, so long as this world goes ringing through limitless space, shall medicine the science, medicine the profession, and medicine the hand-maiden of humanity, attempt to make merchandise of human affliction or

wring commercial tribute from its achievements in the relief of pain and disease.

Thirdly, the true doctor stands for patriotism, devotion to country in war, in peace, in prosperity and in adversity. In all the annals of our country's military history, he occupies a conspicuous and important place. Never does the tocsin of war sound and the tumpet call to the field of sacrifice and suffering that the doctor does not respond. Amid its most sanguinary conflicts, with hurtling death upon every side, he stands like a granite mountain, a restoring refuge for the wounded. The true and loyal doctor takes no delight in human carnage. He does not endorse the oppression of the weak by the strong, and lends no ready acceptance to the doctrine that "might makes right." With the last drop of his unselfish blood he would defend his native land against hostile invasion, or sacrifice himself in the protection of her laws and the preservation of her institutions, but no "criminal aggression" can enlist his sympathies or command his services. The annihilation of governments and the spilling of innocent blood as a libation to the military passion of Mars, or the graceless greed of Shylock, can never win his support. He believes in his country's honor and follows her flag with heroic devotion and hopes to extend the blessings of her constitution and of liberty to every man who seeks her protection or enlists in the cause of freedom.

Dr. Victor C. Vaughan, in a spirited and optimistic address to the students in medicine just entering the class of 1916, said:

"Decisive victories have not yet followed the flags of the central nor the allied armies, but in all, the Red Cross signalizes the most triumphant achievement of man. International laws have been torn into shreds and become mere scraps of paper, moral and religious precepts, and codes have been supplanted by brutalities never practiced by primitive man, and the foundations of civilization have seemed to be on the point of disruption and final collapse, but the spirit and ideals of scientific medicine remain unsullied, and a new world in which these shall dominate will be created."

Fourthly, he stands for science, and believes with Alexander Pope that the proper doctrine is

"Know thyself, presume not God to scan,
The proper study of mankind is man."

The word "science" is derived from the Latin *scire*, to know, and literally means, in medical science, the perfect comprehension of every fact and function of the human body and mind, of every environment, drug, medicine or influence that may affect it in health or disease. He must know the intricate details of anatomy, the interesting facts of physiology and the necessary details of pathology. He must be familiar with the doctrine of immunity and with the practical application of serology, and follow in the footsteps of Paul Ehrlich in productive therapeutics. He must understand human nature in the individual and in society. He must, with Francis Galton, know something of the Laws of Inheritance and Filial Regression, and recognize in eugenics a contribution to constructive anthropology. If bionomics catch his fancy he must appreciate the spirit and labors of Karl Pearson, who showed that diathesis and not disease is inheritable, and that selective breeding in the human family decreases the tendency to regression. Further, he must be familiar with the significance of the Mendelian laws of heredity as shown in dominants and recessives, whether proven in peas or pigs. He must learn the laws of heredity and the nature of affinity and consanguinity, and by wise counsel, wherever possible, save the state from the perpetuation of the delinquent, dependent and defective aggressors of society by inheritance. He must understand the fundamental and profound facts of sex, and the marriage relation, and be prepared with wisdom and courage to prevent crimes against the race and society by the ignorant and the willful. He must not only look after all the afflictions of the human body which God ordained in dignity and glory, but which some of his creatures continually degrade and debase; but it becomes one of his highest duties to understand and minister to "a mind diseased, pluck from the memory a rooted sorrow, raze out the written troubles of the brain, and with some sweet oblivious antidote cleanse the stuffed bosom of that perilous grief which weighs upon the heart."

Essential to the proper conception of the human laboratory, he must study the

chemistry of foods and the metabolism of digestion. Botany, mineralogy, and all their cognate studies must tax his mental energies 'till every shrub and root and mineral shall yield its therapeutic values to his armamentarium. Much has already been accomplished and the *terra incognita* of human nature every year opens a new sesame to some curative agency. Year by year another Harvey appears upon the horizon and supplies the world with accurate knowledge of the circulation of the human blood and all its train of wonderful facts. Every decade some Behring, with patient industry and generous spirit, announces another antitoxin to rob death of its terrors and spare millions of baby prattlers to brighten and bless our homes.

Medical science, which Huxley calls the foster mother of many sciences, stops not at some alluring theory, but with scalpel and forceps, microscope and slide, chemical laboratory and reagent, dissects, investigates and experiments, 'till truth, curative truth, is crystallized from the solutions of theory, and science shouts "Eureka!" upon the walls of some citadel of disease.

With no narrow partisanship, but with liberal spirit, he welcomes into the field of human usefulness every allied science, and joins with the rest of human kind in paying sincere tribute to the Pasteurs who save the swine from cholera, the grapes from parasites, and find a way to prevent hydrophobia, and renders ready allegiance to the Roentgens, who arrange prisms, touch the electric current and control light, 'till the inmost recesses of the human body give up their secrets.

Fifthly, he stands for the home and the family, the unit of human society, the open and inviting door of our national hope and the supreme centre and core of our expanding Christianity. Every home in our broad land has a true and loyal friend in the physician. He worships at the altar where the pristine purity of loving motherhood and the inspiring example of noble fatherhood erect their fanes and rear their sons and daughters "far from the madding crowd's ignoble strife." He stands upon the housetop and raises his warning cry at every social sin that would lay its black touch upon the virtuous homes of our country. He scorns with indignant disgust the civilization that sees no expanding glory to our country in homes filled full of romping boyhood and happy girlhood. He exercises his utmost endeavor to free society from the crime of child murder, whether in forge or factory, sweating out little lives in the mad struggle for wealth or existence, or in crowded or filthy tenements, to become a ready prey to pestilence and epidemic. He remembers that the noblest man who ever lived said of these little ones, "Whosoever offendeth one of these little ones, it were better for him that a millstone be hanged about his neck and he were cast into the sea."

The genuine doctor stands for the purity of womanhood, the nobility of manhood and the preservation of childhood. He is the first with cheery sympathy to welcome baby into the world, and with unconcealed joy watches faithfully and fondly his developing manhood, and with untiring devotion seeks by every aid of medical science, education, knowledge and truth to bring him up as Solomon suggested, so that "when he is old he will not depart from" the paths of honor, sobriety, temperance, integrity, virtue and usefulness.

The honorable physician could not be induced by any manner or means to prevent his entrance into the world, or condone his neglect or mistreatment afterward. He believes a just conception of and protection by society of the home and family are the surest guarantees of our liberties as a people and our survival as a nation.

Sixthly, he stands for duty, the immortal Lee's sublimest word in the English language. Subject like other men to disease, suffering and death, who ever heard of a doctor deserting his post when danger threatened or death lurked in every passing breeze? When war comes with its blighting carnage he volunteers his service, stands faithfully in the midst of shot and shell, suffers privation with his fellows and retreats never. When epidemic has spread his black wings over a fertile land and blown the appalling breath of yellow jack, the black plague, cholera, typhus, smallpox and a host of lesser terrors into the homes of the people, he has given every atom of human energy and every

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inspiration of mortal mind to the prevention of death and the relief of distress. When brutalities untold were practiced in every nation of the globe upon the most unfortunate of God's creatures—the helpless and hopeless insane — Esquirol and Pinel stepped bravely to the side of the sufferers, struck the shackles from their limbs, the terrors from their minds, and restored them to reason and to liberty, amidst public protest and official denunciation.

Professor Henry Drummond, in an admirable address on "The Greatest Thing in Life," has described in character building what he calls the "spectrum of love," and, like the solar spectrum, it has a number of elements, which he asserts to be "patience, kindness, generosity, humility, courtesy, unselfishness, good temper, guilelessness and sincerity;" and he claims that "these make up the supreme gift, the stature of the perfect man." How beautiful the thought, and how beautifully adapted to the life of the charitable, generous, courteous, sincere and honest practitioner of the "healing art." Likewise we can agree with Tennyson that "self-reverence, self-knowledge, self-control, these three alone lead life to sovereign power."

Is not the following uplifting message from Dr. Vaughan's address enough to stir the imagination and to call forth our mightiest efforts?

> "In knowledge man has advanced to a position in which he becomes a co-worker with the Creator, and he must bear the responsibilities which such power imposes. In the struggle between good and evil, knowledge and ignorance, science and superstition, medicine has, and must contine, to lead the way, and you as its standard bearers must serve your day and generation with intelligence, industry and integrity."

Victor Hugo, in the greatest of all historical fiction, "Les Miserables," gave utterance to the thought that "No man should count his life either fortunate or happy until its closing hour," when calm contemplation could review its acts, adjudge it without selfishness, and the future offered no opportunity to mar the beauty and symmetry of the picture.

In consideration of human frailty, and the historical illustrations of ultimate darkness after a brilliant looming on life's early horizon, this may be a just and proper admonition; but permit me to add a serener philosophy like nature knows no ultimate destruction of primal matter, and we all agree with the poet who taught us to

> "Count that day lost whose low descending sun
> Views from thy hands no worthy action done."

And we can rest supremely content if only the "cup of cold water" has been given to some afflicted fellow, or, like Prospero,

> "Mine eyes, even sociable to the shew of thine—
> Fall fellowly drops."

While in rare instances unappreciative patients treat the doctors as Stephano proposed to treat the sprites,

> "Flout 'em and scout 'em, and scout 'em and flout 'em."

Still, it must be frankly admitted that, for the most part, a grateful public cherishes the warmest admiration for the faithful physician.

And so, my colleagues, you need no brazen tablets, no granite spires and marble shafts to perpetuate your well-cherished memory and signalize your deeds of kindness, and when

> "Life's duty done, life's race run, life's crown won",

with clear conscience you may

> "Wrap the drapery of your couch about you, and
> Lie down to pleasant dreams."

THE DOCTOR'S WORK FOR NAVAL PREPAREDNESS*

By Cary T. Grayson, M.D.,
Surgeon, United States Navy,
Washington, D. C.

Once upon a time an Eastern caliph, addressing his people, turned to the multitude and said, "Oh ye people! Do any of you know what I am going to say?" And the people answered, saying, "No, ruler of the faithful, we know not what

*Address, General Session, Southern Medical Association, Tenth Annual Meeting, Atlanta, Ga., Nov. 13-16, 1916.

you are going to say." "Then," said the caliph, "I will hurt no one's feelings, I will not disturb the serenity of any of you; I will say nothing."

And a second time and on another day he again arose to speak, and turning to the multitude he said, "Oh ye people! Do any of you know what I am going to say?" Remembering what had happened at the last occasion, they answered, "Yes, master, we all know what you are going to say." "In that case," said the caliph, "there is no use of my saying it," and thereupon he departed.

On a third occasion he arose, and turning to the people, he said, "Oh ye people! Do any of you know what I am going to say?" The curiosity of the people was now thoroughly aroused, and considering what had happened on the two previous occasions, they answered, "There are some of us who know, but there are many of us who do not know." "Very well," said the caliph, "then those who know should tell those who do not know." Thereupon he went his way.

Some of you have an idea of what I am going to say. I admit that there are times, particularly in serene times of peace, when it is best to say nothing; but the moment has come when, unlike the caliph, I am going to trespass upon your time so that when you go back to your homes you will not be without some impressions of the Navy, and so that those who know will be able to tell those who don't know.

Impressed by the spirit of generous patriotism which has prompted doctors in civil life throughout the country to unite in offering their services in time of peace, to the President of the United States, in preparation for the emergency of war; and feeling that among this audience there are many who are impelled by this impulse, I want to present briefly what the doctors in the Navy are doing, that you outside the service, and we, inside, may understand each other better and co-ordinate our work for the great purpose of protecting our country from invasion and our national health from disease.

First, let me tell you a little of the beginning of the Medical Department of the Navy. It began in a very humble way, without friends, money or influence, about 1783, when the occasional designation of a surgeon to a ship of the Navy was made. It grew with the early wars, and in 1812 was fortunate enough to secure the service of William P. C. Barton, of Philadelphia, under whose fostering care the medical service gradually took shape, resulting, in 1844, in a creditable organization, of which the great Barton became our first Surgeon General. Barton's greatest work, to my mind, was in his grasp of the medical needs of the Navy. His written outline of the work was so complete that it continues today as the practical basis of the present organization. While Barton stands out as perhaps the first really great man in the Medical Corps of the Navy, he has been followed by a host of most notable men, who, by their accomplishments in the service and in private life, have added luster to the history of the medical profession. Besides Barton may be mentioned Benjamin Rush, Elisha Kent Kane, the noted explorer; Thomas Harris, who was voted a silver service by the City of Philadelphia for his work in cholera; the great Ruschenberger, one-time President of the College of Physicians of Philadelphia; William Whelan, Surgeon General during the Civil War; E. R. Squibb, whose work and name need no word from me; Horwitz, Wales, Tryon, and a host of others leading up to Surgeon General Rixey, who, perhaps, is known at the present day more widely than any Surgeon General, and who did more for the Navy medical service than any man did before him. He built the present magnificent naval hospitals, established the Naval Medical School in Washington, and is responsible for the awakening along many lines that has made the medical service of the Navy the best in the world. In the present day we look with pride to many of the ablest men of the times, such as Stitt, of international reputation for his work in tropical medicine; and the present Surgeon General of the Navy, William C. Braisted, who was associated with Surgeon General Rixey as his assistant for six years, and under whose present regime there is promise of greater advancement than has been accomplished in the whole history of the corps.

For more than two years we have been confronted on all sides by the horrors of war. The eddies of the mad and seething current have sucked into the wild whirlpool of bloody strife, one after another, countries who were seemingly striving to maintain a neutrality. Our earnest thoughts urge us to estimate our own situation. We question ourselves upon the measure of our preparedness. Some believe we are ready, but there are others who realize that there is much to be done. It is, therefore, my purpose to tell you briefly something about the Navy, and what the surgeon and medical practitioner now engaged in peaceful pursuits may do to aid us.

The greatest frontier of our country, that boundary in part separating us from the most stupendous conflict of all time, is the ocean. The protection which stands between our coasts and an enemy from over the sea is vested in the Navy. It is our country's first line of defense. But the coast is long. It demands no small sea power to defend it from an invader. In proportion to the greatness of our coast, so must be the greatness and power of our Navy.

The Medical Corps, as authorized by the last session of Congress, was increased to a total of 683 medical officers. These officers are distributed from assistant surgeons with the rank of lieutenant, junior grade, to medical director with the rank of rear admiral. The rank of rear admiral is a new one with us. It must be a peculiar pleasure to you to know that the representatives of your profession have received from Congress this recognition of merit and worth. The navies of England, France and Japan have long conferred this dignity upon their medical officers.

The new Act of Congress creates 350 vacancies, and the need for more medical officers is urgent. I call your attention to this fact so that, when you return to your homes, "those who know may tell those who do not know."

In addition to our regular corps we have a Medical Reserve Corps. It is, as its name implies, a reserve of medical officers available for naval duty in time of war or emergency. This corps is also greatly short of the number necessary to meet our needs. Those who seek admission therein are subject to a physical and professional examination, as required by law. When they successfully pass the examination they receive a commission from the President of the United States, by and with the advice and consent of the Senate.

The recently established Dental Corps enables us to add the final touch in preserving and perfecting the health and physical well-being of our forces.

Our nursing corps is composed of two groups: The first, the Hospital Corps, has just been increased to 3,000 in number. There are 1,500 newly created vacancies open to the youth of the country, who possess the physical and moral qualifications and the elements of a common school education. One of the splendid results of Secretary Daniels' efforts in behalf of the enlisted men is the opening of two large training schools—one at the training station at Newport and the other at the training station at San Francisco — for these men who receive education in nursing, chemistry, bacteriology, hospital administration and pharmacy, leading to the position of chief pharmacist, with the possibility of obtaining a commission with the rank of ensign, and ultimately the pay of a lieutenant—in the Navy—with the allowances and retirement privileges that go with that rank. Congress has wisely placed this corps upon a percentage basis, so that it increases automatically as the Navy increases.

The second is a splendid corps of women nurses, open to the best qualified of the land. They are available for duty at large naval hospitals and on hospital ships.

We have officers detailed for special work with the Red Cross. Our Medical Department is working with sympathetic co-operation in the establishment of five Navy units. One of our officers devotes his entire time to this work.

The Navy today is one of the largest hospital organizations in the world. It has eighteen large general hospitals, of the finest military type ever developed.

Every man-of-war has a small hospital on board, complete in every detail, and

equivalent to the small Army post hospital with which you are familiar.

We have heard much of base hospitals operating upon land. Its analogue upon the sea is the hospital ship. I can not say how many of these ships have been employed in the present war, but each country has contributed its quota.

The British had 42 hospital ships operating in the Gallipoli campaign. But all of these ships were converted ships, that is to say, they were built for other purposes, and were hastily made over for use as hospital ships. We have had the Solace, a ship of this class, operating with our fleet for several years, and her worth and value have long been established.

A fleet may be likened to a large city of over fifty thousand adult, male inhabitants, all engaged about machinery, tossed about by wind and weather, handling high explosives, subject to hazard of life and limb and the perils of exposure. What could such a population do ashore without a hospital? It is therefore as necessary that we should have our hospital ships as that Atlanta should have her hospitals. I take pride in telling you that in the splendid naval program which became a law a little over two months ago, Congress provided $2,350,000 for the first hospital ship to be constructed for this purpose. We have planned and studied for this ship for twenty years. The United States is the first to take the initiative of deliberately building such a ship.

Her design will include features the result of long study and experience in our own fleet and also in the fleets in the great war now raging. She will possess every modern facility of a large general hospital. She will be an oil burner, free from dust and dirt, equipped with gyroscopic stabilizers to make her steady. The operating room will be large and spacious, extending the height of two decks. The X-ray rooms, laboratories, dental rooms, eye, ear, throat and nose rooms will contain the most modern appliances. It is not my purpose to tire you with the details of her construction and equipment. I wish only to add that to mothers and fathers, to sisters and brothers, to all relatives and friends of the man who has cast his lot upon the sea in the service of his country, to those good people it must be a satisfaction to know that wounded or sick, the officer, bluejacket or marine will be tenderly and efficiently looked after. When you go to your homes once more, again to use the words of the caliph, "Those who know should tell those who do not know."

In time of war we would probably never have the immense number of wounded we hear of in connection with the great battles of Europe. A battle on the sea is not a fight between men; it is a fight between ships. When these ships come back from the sea with their sick and their wounded, they will look to the hospitals of the coast cities to help them. Even our large navy yard hospitals are not large enough to handle unaided the numbers that would result from a battle of grand fleets with a naval power of the first class. In the civilian hospitals of all the large cities where our naval stations are located, we may need the assistance and abundant facilities their hospitals offer.

For purposes of defense our coast is divided into naval districts. The activities of some ships are confined within a district, and for these ships we must find hospital facilities within that district. All medical men who reside in coast cities may well consider what service they can render the Navy in time of war.

The duties of medical officers in the Navy are peculiar. They do not concern the treatment of disease alone, but the broader fields of preventing diseases — which are in a measure occupational. It is primarily a duty with ships and concerned with the ocean. The ship as a habitation has no features comparable to conditions on land. All the surroundings of the life are the unusual rather than the usual, the artificial rather than the natural. Immense furnaces in the interior of our ships produce conditions of great heat, unusual to an ordinary environment. The air for ventilating purposes which might enter a house from below and rise from level to level by natural movement, must be drawn from the top and distributed by artificial means, a form of mechanical respiration, so to speak, aerating the various constituent compartments. The wa-

ter we drink is artificial, for there are no springs in the hull of a ship, and it must be manufactured from the element in which we float. When the ship leaves port, or stays for a long time on patrol or blockade duty, we can no longer have the fresh food which is enjoyed on shore, but food must be preserved. Below the decks and in the bowels of the ship a ray of sunlight can never reach, natural light can never penetrate. We are confronted with the problem of keeping fit the man who steps beyond his natural environment.

In the submarine, all that pertains to life on board of a battleship is accentuated. Once the submarine is closed, the air within is no longer the atmosphere, but a descendant of the atmosphere. The oxygen content is drawn upon by the human beings and begins to drop, minute by minute. What is left of the air the human beings and the batteries within the hull begin to pollute with waste or by-products, producing effects upon the human organism resident therein. We may live without food or water for a long time, but life without air can be measured in minutes.

We confront physiological problems connected with deep diving, for in recent years our Navy has developed this field so that our men have descended to pressures as great as ten atmospheres. There are also physiological problems of a reverse character in connection with aeronautics, the personnel of which may ascend to regions of atmospheric tenuity equal to one-half of an atmosphere.

Our work takes us into extremes of heat and into extremes of cold. We go to corners of the earth where diseases exist that are little known to those who do not leave their own country. Our doctors are on observation duty in England, France and Germany. After the great war, they will return to tell us of the advance made there in medicine and surgery. The report of Dr. Fauntleroy, of the Navy, on "Medico-Military Work with the Allies" is accepted by the profession as the best treatise on this subject.

In Guam our doctors have made great progress in the treatment of that horrible native disease, gangosa.

The Samoans believed in the superstition that all disease was caused by a devil inside the patient, which had to be smothered or choked before the poor sufferer could be released. After seeing the wonderful results obtained in surgery by the Naval surgeons, especially in the treatment of elephantiasis, hairlip and cleft palate, they abandoned their barbarous customs and came gladly to the Naval Dispensary for treatment. They became so appreciative of modern surgical and medical treatment that when one of our surgeon's tour of duty was completed at that station, several hundred natives petitioned the President of the United States to let him remain there forever.

In Haiti, we are yet in the early stages of converting a difficult and unsanitary place into a healthy one in which to live.

While I am talking with you there are officers of our corps spread around the world, from the City of Constantinople to the legation compound at Pekin, each with his own work to do in the service of his country.

In the Navy Yards in this country our doctors are carrying on the work of general practitioners, caring for officers and men and hundreds of civilian employees in the gun factories and machine shops.

In the march of sanitary science the Naval Medical Corps has always held a place in the front rank. Many preventable diseases have been wholly or in part eliminated. There was a time when the fleets that left Europe to visit the West Indies lost more than half of their crews. Today such a trip is attended with practically no danger. You recall the voyage of Magellan, who left Spain with a squadron of five ships and 265 men. In less than a year, one ship with eighteen gaunt and haggard survivors returned to Spain, completing the first circumnavigation of the globe. It was four hundred years later that the United States battle fleet completed its epoch-making cruise around the world. Since the days of Magellan wonderful progress has been made. Today morbidity and mortality upon the sea have become almost negligible factors. Diseases like ship typhus and scurvy have disappeared, and infections like typhoid,

thanks to prophylactic inoculation, are almost unknown.

The officer who enters our reserve corps should eliminate from his mind the idea of preparedness camps and base hospital units. His duties concern the ocean and ships. They will take him out of sight of land, where he is surrounded only by water and sky. His professional isolation under these conditions will be complete, and he should therefore be of sound and healthy constitution. He will be dependent solely upon his own resources. He may have no professional brother with him to help solve his problems. He should be a young man ready to stand hardship. He will need an adjustable mental constitution that can make the best of surroundings, ever striving to instill hope into the breasts of his shipmates and stimulating others by his example.

Especially among foreign nations does integrity in life make or mar the nation represented by any military body. The semi-civilized nations of so-called low orders expect to see in us an example of Christian living and morality. Many a poor soul has had his ideas most rudely puzzled by the thoughtless conduct of some ill-regulated life. The Naval Surgeon has, by his position as an officer, a high place in representative social life to maintain. While he must be presentable in a foreign court, no less must he be the kindly, courteous, helpful gentleman in the home of the poor or the hut of the barbarian. This qualification, perhaps more than any other, is essential in the life of a successful Naval Surgeon.

No man is fit to be an officer in any of the organizations of the Medical Department who has not the highest sense of patriotism, devotion to duty and love of his native land. We are all highly patriotic in the abstract, but when one is harassed by the thousand and one trials of a life of this kind, subject to the jealousies, disappointments and unfulfilled ambitions of military life, one must keep permanently in mind the idea of a self-sacrifice for the good of the service, and glory in the trials, deprivations and hardships which he is privileged to undergo for the sake of his beloved country. The greatest reward any military man has is to contemplate at the end of a long service life the hard places successfully passed over and the realization that never, even under the most trying and hopeless conditions, has he lost sight of that God-given instinct, characteristic of every true man and citizen—patriotism.

The idea outlined to you here often comes to me to encourage and content me when I hear the thunder of great guns which I do not fire, and see in my mind's eye the picture of carnage, destruction and cruelty of war; in the midst of which, sharing all its dangers, the military surgeon must be present, the same cool, calm, helpful, peaceful factor that his civilian brother is in the daily routine of life.

The Naval Surgeon must know men and learn to command them. This is most essential. With decision must be patience; with inflexible rules must be kindness; with discipline, sympathetic appreciation of the situation in order that military necessity may not create injustice to the sick and the weakened in body and mind. The Naval Surgeon must often be the only city of refuge for the unfortunate, the homesick, the wayward, as well as the diseased and crippled.

In the Navy isolated groups can be so safeguarded by preventive medicine that the results obtained can leave no question as to the efficiency of any measure. As an example, take typhoid fever prophylaxis, which has practically eradicated typhoid fever from the service. Where this has been attempted in civil communities, years and years of effort are required for mere partial success, due to the ignorant or biased elements that exist in all people. I think this illustration will show you the point I am making. This is, that from military-medico services, made possible by the complete control of isolated bodies of men, have come the solution of many of the greatest problems of preventive medicine. They have been given to the civil communities in a perfected and fully demonstrated form that should bring untold blessings to the world at large.

Medical officers are beginning to study carefully the strategic plans of proposed operations, to familiarize themselves from the military standpoint with the demands that will be made, and so to prepare and

equip that the campaign may not end in defeat and disaster on account of a personnel overcome by disease and debility. When war threatens, the Navy Department, in preparing for the contest, calls at once for complete medical preparations.

I tell you these things hoping you may see what kind of men we need in the Navy, the kind of men that the Southland has done its share in producing, and when you go back to your homes, using the words of the caliph, "Those who know should tell those who do not know."

More has been done during the past year by Congress for the Medical Corps than has been done in the whole history of the Navy. This has been accomplished by the intelligent and interested members of the Naval Committees of the Senate and the House, supported by the earnest efforts of the President of the United States and the Secretary of the Navy, and by the clear presentation of the needs of the service by our Surgeon General, William C. Braisted, all of whom have given, in their respective spheres, sympathetic support in the endeavor to make the Medical Department of the Navy the best of its kind in the world, always working with full realization of what it means to the folks back home to know that their fathers and brothers and sons, far away in unknown and often perilous surroundings will be kindly, and skilfully cared for.

Ladies and gentlemen, if I have been able in this short talk to give you just a glimmer of the great work of our Corps, and of the life work of my brothers in the Navy, I shall feel satisfied. If I have been able to gain your sympathetic co-operation in the work of your country's defense, I feel happy in a duty well done.

My friends, whether we are medical men in the service of the Government, or in private practice, the responsibilities are heavy, the work most exacting, the situations nearly always trying, the remuneration not always large. But there is ever present with the man who is true to the highest ethics of his profession, an earnest desire and a sincere effort to do the best that human knowledge and human skill can do for every case that comes to him, without counting the cost either in energy, in work or in worry. Skill in surgery increases marvelously. Better sanitation in the city and the country is going on and the physicians are leading the movement. But there is a great work yet to be done. We are in the midst of mighty efforts in a medical way to make this country a *healthier* place in which to live. With one accord the medical men are striving to lessen the ravages of disease, to wipe it out where that can be done, to lengthen the span of human life, and always to bring hope and happiness where there is suffering and misery.

THE UTILIZATION OF THE DISPENSARY IN MEDICAL TEACHING*

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In presenting this paper I wish to express my appreciation and gratitude to Dr. C. C. Hinton, Chief of the Dispensary, for valuable data given me. I consider the dispensary of a medical school the most valuable teaching unit, and in the discussion of this paper I hope to get the opinions of others in regard to the use of this material.

The importance of the dispensary as a teaching factor can not be too strongly emphasized. The attitude of most medical schools in this matter is analogous to the attitude of the majority of persons to the golden rule: something that is recognized as a truth but scarcely within the bounds of practical accomplishment. Quite a good deal is written about the opportunities presented, but the methods of utilization of these opportunities remain very much the same throughout the country.

However, it does no harm to recapitulate a few of the reasons why a dispensary is not only a wonderful teaching asset, but is actually the greatest teaching asset provided by modern medical schools for clinical teaching. In spite of the tendency to-

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ward specialization in modern medicine, the fact remains that, for the most part, we are educating men for general practice and will continue to do so indefinitely. From this it is scarcely necessary to say that for such education we need primarily material that resembles most closely the line of work which the practitioner will do when he begins his professional career. This is not the material of the hospital, but is found most surely in the dispensary.

We find in the hospital the severe accidents, acute infectious diseases and the bed-ridden chronic cases of an advanced type. In the dispensary are found the ailments that are classified as minor medicine and minor surgery, the incipient cases of chronic diseases; the patients that go as a continuous stream to the offices of physicians or call the doctor if they are in better financial circumstances; and more constantly the neurotics that will easily confuse one who has had no experience with them. It is in the dispensary that the student must become familiar with these or he will miss them entirely.

It almost seems to be paradoxically arranged that students should first be introduced where diagnosis is difficult and later be carried to the hospital where disease has advanced to a more recognizable form. It is adopting the attitude of the laity to assume that because "nothing much is the matter," even a tyro should be able to decide what it is and what should be done. It is in the dispensary that an opportunity is offered at a time when arrest of chronic processes is possible, when recognition of the real trouble and not simply a symptomatic diagnosis might save a useful member to society and not a useless parasite.

At this point it might be mentioned that the equipment of the dispensary both in men and material, interest and instruments should be the best obtainable. To quote from the report of the Committee on Equipment to the Association of American Medical Colleges (J. A. M. A., pp. 1156-8, April 8, 1916), "It is a common but mistaken assumption that medical fledglings are capable of adequately caring for this important work."

There is the further opportunity of teaching the great and growing field of preventive medicine, not simply as applied to the individual, but as regards the home. Students should be stirred to interest in social service work, and should be encouraged to investigate interesting problems presented by tuberculous families, lead poisoning, rickets, etc.

Associated with this field of activity is the chance to educate patients and, in this way, to teach students to educate their patients in matters of hygiene.

It is scarcely necessary to go further into detail along this line. The opportunities are almost endless both for the doctor and the student. The recognition of this by the doctors would soon make the opportunities as boundless for the patients who, at present, are unfortunately at a disadvantage. It may be repeated that the parallel to the typical office practice makes it by far the greatest opportunity of teaching and learning the every-day side of the doctor's life. The dispensary training goes far toward the making of the future doctor; toward determining whether he shall be merely a dispenser of pills for pains or a student of the underlying pathology and a practical researcher into the relations of this pathology to the science of pharmacology. And it is in the hands of his instructors to mold the one or the other.

The school that neglects the dispensary as its center of clinical teaching is a factory for the doctors that are "distinctly below the average," and neglect consists in failure to supply the proper men, the proper instruments of precision, the proper housing and the proper atmosphere.

It is my purpose in this paper to outline the present organization of the Atlanta Medical College Dispensary, and later on to note its defects.

The heads of the different departments in school are in authority over the clinics; and in dermatology, neurology, gynecology, ophthalmology, oto-rhino-laryngology and genito-urinary diseases they are actually in attendance every day during the teaching months. In surgery the associate professors are in charge, and in pediatrics and medicine associates are in charge. The general supervision of all clinics is in the hands of a Chief of Clinics; the policy being recommended by the Committee on Hospitals and Dispensaries to

the Faculty as a whole for ratification.

The other officers of the dispensary are a pharmacist, with complete charge of the drug room, whose duty is to keep the stock up and fill all prescriptions for dispensary patients; a record clerk, who attends to filing and giving out all histories, keeping the out-patient obstetrical charts, etc.; a college operating room nurse; and a head nurse for the Dispensary. These are all full-time positions except the Chief of Clinics, this having been put on a part-time basis this year. Several pupil nurses are supplied by hospitals in the city.

On the actual active Dispensary staff are four doctors on pediatrics; twelve on medicine; sixteen on surgery; two on dermatology; four on neurology; four on ophthalmology; seven on gynecology; seven on genito-urinary; five on oto-rhino-laryngology; and two on obstetrics. This is a total of sixty-two. In addition the two City Physicians are associated with the out-patient work in that they send in obstetrical calls from charity cases. Of course, all of the doctors do not attend every dispensary period.

When a patient comes to the Dispensary for the first time he finds the office to his right and the record clerk behind her wicket. She writes his name and address upon an admission card, makes a duplicate record for the "name index" and then writes his name, address, occupation, race, sex, age, birthplace and social position as regards marriage on the outside of a Manila folder which is to contain his entire clinic records in the future. On a plain history card is written the patient's name, race and date of admission. All four of these records are given the same number, the serial running throughout all departments. The patient is then charged 10 cents for the registration and is given the admission card, history folder and blank history card and sent to the next window, where the Chief of Clinics questions him regarding his trouble, decides what department he should attend and directs him to the waiting benches for that department, if the clinic is in progress at that time. Otherwise, he instructs the patient when to return for treatment. The patient retains only the admission card, which he is instructed to bring back whenever he returns, regardless of the condition for which the return visit is made. The folder and the history card are stamped by the Chief of Clinics to which they are to be sent and are sent to the rooms by a messenger. No doctor is allowed to handle a patient unless the history is stamped for his department.

In case a patient has been sent to the wrong department in the beginning or needs to be transferred to another service, he is given a prescription blank by the doctor wishing the transfer, stating the department to which he is to go, and is sent to the Chief again. The Chief sends a messenger for the history, makes out a blank card for the new department, stamps it and also the back of the folder, dating both stamps, and sends the patient to the new quarters as at first. On return visits the patient presents the admission card to the record clerk and she hands him his folder, which he carries to the Chief, who inquires whether he has returned for the same complaint and directs him accordingly. No patient is allowed to handle his history except between these two office wickets, as it has been found that otherwise they usually carry them home. Doctors and students call the patients into the examining rooms by name. At the end of the clinic the doctor in charge of a room either brings all of the histories of that room to the office and gives them to the record clerk or he leaves them on the table in the room and they are collected by the clerk at the end of the clinic. No patient is admitted under any consideration after eleven for the morning clinics or after three for the afternoon clinics. The Dispensary opens at 9:30 for the morning clinics and at 1:30 for the afternoon clinics.

The doctors come on duty at 10 A. M. and 2 P. M., every doctor being required to register at the Dispensary office the time of his arrival and the time of his departure. This register forms a regular part of the monthly Dispensary report.

In the examining room the students take histories of the patients and examine them under the supervision of the doctor in charge of that room and record the findings on the cards. The doctor makes the final diagnoses that are recorded on the cards and countersigns the history after the student, if he accepts it as satisfactory.

The doctor also determines the treatment to be given and signs the prescription. The patient then carries the prescription to the drug room, which is directly opposite the office, and there waits for its turn.

In order to simplify the work for the pharmacist and make it possible for one person to do the work, we have printed prescription charts and it is asked that, unless the doctor is convinced that he can get better results by other prescriptions, these definite stock formulae be used. A different chart is used by the ophthalmology department.

The Dispensary laboratory is under a doctor who devotes from 2 to 4 P. M. each day to it. He is assigned two or three students from the junior class to work under him and all the laboratory work desired on Dispensary patients is sent to the laboratory. In case it is simply a specimen to be examined, a request card is sent with it and the report is made out on a regular laboratory report card which fits the history folder, the report being signed by the student making the examination and by the laboratory doctor. In case it is a blood examination or blood to be taken for a Wassermann, the patient accompanies the request card. The Wassermanns are done by a private medical laboratory in the city. A special form of request card is made out for this work, being filled out in duplicate, one card being filed in the laboratory doing the test and the other filed in the Dispensary office after it has been returned with the report. At the end of the clinic all laboratory reports are brought to the office and given to the clerk, who puts them in the proper folders and files all the returned histories. The numbers of all histories are recorded as they are given and are checked in as they are returned.

It is also recorded at the end of the day how many patients there were in each department, how many of these were new, how many were transfers, how many were return cases and how many of the total were white patients. There is no local social services department, and it is left with the record clerk to decide whether a patient is able to pay for admission and it is left to the Chief whether he is to be given free prescriptions. No one is refused admission or treatment. A regular charge of 10 cents is made for prescriptions. There is no way of checking up the finances of either end of the line, this being left entirely to the honesty of those handling the funds.

A small pocket folder of the rules of the Dispensary is given to every doctor connected with the institution so that there is no excuse for violations.

This system has been worked out for the administration of the Dispensary in our present unsatisfactory quarters. There are quite frequent infractions of the rules, as many of the regulations are comparatively new and the system is strange. It is hoped that before long the value and wisdom of the system will become apparent and the work will run more smoothly.

Every doctor on the staff of the Dispensary is also a teacher in the Medical School. They are present for the triple purpose of learning more of disease and practice for themselves, teaching the students the principles of diagnosis and practice and, not least, of assuring the patients real professional services and not simply the practice of amateurs. To this end they go over the histories taken by the students, amplify them where necessary, make valuable suggestions and, in general, give instruction in the ways of taking correct and careful histories. In the same manner they check up the physical examinations and teach physical diagnosis. Then they continue their offices into the realm of treatment and become teachers of therapeutics.

In the laboratory, as has been said, the students are also working under the direction of a doctor. Here they are taught the applications of the laboratory tests that have been taken up in the clinical pathology course.

Just as it is true that at present nobody is denied admission to the Dispensary for treatment, so it is true that any one coming into the Dispensary is considered as agreeing to be used as clinical material while there.

The junior students work only in medicine and surgery, spending a total of four months in each. The senior students work in the specialties, including pediatrics, neurology, gynecology, obstetrics, gastroenterology, cardiography, tuberculosis, orthopedics, ophthalmology, oto-rhino-

laryngology, psychiatry, genito-urinary diseases and dermatology.

Out-patient obstetrical cases are encouraged to come to the Dispensary for the original examination, but are not required to do so at present.

The Social Service Department of the Dispensary exists only in plans at present. There is really no social service work done officially by the Dispensary. We have no follow-up system nor any of the highly important branches of this field. The nearest we can claim to such activity is that we are willing and glad to co-operate with such agencies in the city. The antituberculosis clinic is used as a teaching branch of the school and we notify them of every case of tuberculosis we find and examine for them cases of theirs which have troubles not due to tuberculosis. We attempt to co-operate with the City Board of Health by reporting to them these and other cases of reportable diseases. We are in friendly relations with the Jewish Alliance, Salvation Army, Associated Charities and the city school examiners. This is, of course, a mere shadow of a beginning, but it constitutes our whole social service schedule for the present.

There were 25,330 patients treated in the Dispensary for the year ending September 30, 1916. A few more were actually handled, but, owing to substitute clerks, inaccuracies crept in. Of these patients 6,006 were white and 19,324 were Negroes. Ophthalmology and oto-rhino-laryngology became separate departments on July 1, 1916, and the total number of patients in these departments was 1,310. Orthopedics is, at present, under the management of the Grady Hospital, but will be transferred to the College when the new building is completed. The number of patients in this department was not included in the above figures.

Our present clinical dispensary work is done in the basement of our college building, which was never constructed with the idea of being used for clinical purposes. It is deficient in size, in floor space, lighting and ventilation, and is very seriously handicapped in handling in a systematic way the cases now in attendance. We are now constructing in the rear of the new medical building an out-patient building which will have three stories and a basement and which will afford adequate room for the dispensary work. The building will cost approximately $60,000 and will be connected by corridors, or some way, with the new hospital soon to be constructed, as well as with the present College building. When this arrangement is completed the Dispensary will serve as a selective filter for teaching material in the Hospital, to which patients not necessarily hospital cases can be sent for a few days for special clinical study and demonstration. Such a connection will also give us more constant and reliable special nursing; would be of material saving financially, as the supplies could be interchangeable; heart station, X-ray station and hydrotherapeutics that can scarcely be afforded by the Dispensary itself are not beyond reach when shared with the Hospital.

Apparently a mistake has been made this year in changing the position of Chief of Clinics from a full-time position to that of a part-time. It makes the position more attractive to the holder, as it offers opportunities for clinical experience in private practice, but relations can not be made to balance. The school can not afford to pay enough for a partial time man to secure the time and attention that the Dispensary needs and the man can not afford to give the time and attention to the work that he knows it needs if he has to make two-thirds of his living in the beginning years of practice. If the man is interested in the work he can not feel satisfied with the results he will get on part time, part interest, part thought. The only justification for continuing such an arrangement is that at present the money is needed so much more in other fields.

The next change to be suggested is one that must come about gradually with the growth of the Dispensary. The ultimate aim is to have a clinic in every department every day. No department should be allowed to decrease the number of clinics per week and a constant tension toward increase should be kept up. There is no trouble about not having the material to work with. The trouble is that the doctors have been in the habit of being rushed so much by an excess of patients that they have acquired the "dispensary habit" of

rushing pell-mell through with a patient to get to the next, the most vicious habit a young doctor can acquire. Museums of pathology are passed by through pure carelessness and a wealth of clinical material is lost because originally too much was required of a man.

This subject naturally leads to another needed improvement, and that is the use of the greatest care in the choice of the staff. No man should be taken because he applies when you need a new man; because a friend of yours says he is a "good man;" because he came from a good school, or because he makes a good appearance at first sight. Each man should be investigated by the head of the department and by the Dispensary Committee. To have to work under rushed conditions necessitates poor teaching and the teaching of hasty and unsatisfactory methods.

It is frequently stated that the only satisfactory staff for a dispensary is a paid staff. Any additional attraction to the work is so much gained, but it offers more appeal to the unworthy than the worthy. The real teachers of medicine are willing to do it for the sake of teaching if they can. Still, it can not be denied that a few could afford to do it if they made even a small amount out of it and could not afford it otherwise. The dispensary can not pay full-time salaries and does not need full-time services. Part-time salaries are usually unsatisfactory, as they never pay for the time they consume. A scale has been suggested by which a doctor receives a credit of one dollar each time he fills his appointment and is reduced two dollars every time he does not fill his hours. This would inhibit careless absences and would amount to a very small recompense to the doctor for filling his time. It is estimated that it would cost the Dispensary about $2,000 a year.

A few changes are contemplated in the administration of our Dispensary. The main ones can not be effected until a Social Service Department is introduced. This department will be taken up briefly later, but here it might be said that the decision as to whether a patient should be admitted should be left to the executive of the Social Service Department. A system of admissions should be formulated such as Dr. A. R. Warner, of Lakeside Hospital, Cleveland, has suggested.

There are four classes: A. general admission to any department until revoked, given to those who will probably never be able to pay; B. admission to any department for this sickness only, those who under favorable conditions could pay a doctor; C. admission for major or special surgery which is entirely beyond their ability to pay for, although they can pay for minor troubles; D. admission for consultation or special examination only; no treatment given. These are patients who can pay their doctor but can not pay a consultant, X-ray fees, Wassermanns, etc., and are given a blank to their family physician for him to sign if he wants the consultation. All classes are investigated by social service workers and are placed in the class to which they belong. Four forms of refusal are also used: (1) straight refusal when there is no good reason for the patient's coming to the Dispensary; (2) refusal and reference to some good neighboring physician, given to strangers who can pay but do not know where to go; (3) treatment refused, but consultation offered (Admit D); (4) refusal except for special or major surgery. All of this has time to wait for social service.

Under the present system some of the doctors complain that in transferring a patient they lose him completely. A plan has been made for consultations to replace transfers in such cases, as it is not considered essential that treatment should be given in the second department, but assistance is needed in a diagnosis.

Since prescription charts seem to be a necessary evil of dispensary management, it seems that these should be formulated by the heads of the departments for each department and condensed as much as possible.

An X-ray department is one of the greatest needs of the Dispensary at present. It is exceedingly difficult to have this work done satisfactorily under the present conditions when we have to depend upon the charity or convenience of outside machines for the work. This is also one of the gains we will have from the new building, as an X-ray room is provided for in the plans.

The greatest need for a change in the administration and equipment is the installation of a cross-index system for diagnosis. Toward this end we have secured the literature from the Massachusetts General Hospital on their method of classification of diagnoses. The system is excellent and is probably the best we can adopt, but it seems that it is going to be almost impossible to use any system until a full-time man is in charge, as a record clerk can scarcely be expected to be able to handle such technical details until she has had a great deal of experience along that line.

The needs in the Social Service Department are complete. They are so extensive that it is depressing to contemplate them. It is not exaggeration to state that without such a department at least half of the work of the Dispensary is wasted. Without follow-up work it is not possible to pursue cases to a cure, to investigate home conditions, to care for the feeding cases, and to teach home hygiene and prevention. Students should be organized and interested in this work, too.

The organization of this department should be left in the hands of an experienced head. Social service and the practice of medicine or nursing are different fields. Co-operation is indispensable, but one person can not superintend both satisfactorily. This head should have an office in the dispensary and should have authority over admissions, refusals, and free treatment permits. Assistants are needed, but in the beginning these might be on the order of the clinic secretaries of the Massachusetts General Hospital; unpaid volunteers among the young ladies of the city, interested in the work, who help patients find their places, make investigations under the direction of the executive and help in the follow-up work.

The executive needs to organize a system of co-operation with the city health department, anti-tuberculosis association, associated charities, Salvation Army, employment agencies, milk depots, other dispensaries, Jewish Alliance, hospitals and all other charitable and social organizations of the city. A beginning can not be made without this trained executive. Full-time assistants are much needed. The non-resident nature of the dispensary patients makes a social service department a necessity for an efficient dispensary. If funds are limited this is by all means the first place that they should be used. The returns to teachers, students, patients and community will more than repay the money, time and work expended.

The advisability of placing the financial system of the dispensary on the "single tax" basis is well worth considering. By this is meant that each patient pays either 5 or 10 cents, as seems best, for admission each time and no further charges be made for anything. This would simplify matters of collection and would bring about the same returns as the present system. As it is, the surgical patients do not pay for dressings, but medical patients pay for prescriptions. Such a system would be an undoubted improvement if there were the social service executive to decide about the payment or non-payment of the tax.

In regard to teaching, the needs in this line are simply a general increase of interest and attempts of individuals to improve themselves. It is certainly necessary to have the most capable men securable for the work in all subjects and to increase the medical staff to such a size that the individual men will not be overworked or rushed so that they can take a deeper interest in the cases and devote more time to teaching and less to the purely detail work of getting through the crowd in time to get back to their private patients. I can not refrain from mentioning again the exceedingly bad influence such a practice must exert on students, not to mention the fate of patients who suffer the ill effects of treatment for purely symptomatic diagnoses.

The out-patient obstetrical work is a difficult problem. A doctor should be required to attend the labor cases with the students. It is not fair to the patients or the students. It would not be permitted a student to perform a major surgical operation even with a doctor at hand, and yet an equally serious matter is left to students in houses that are none too clean and without the supervision or judgment of a physician. It should not be tolerated. The only solution is to have a competent young doctor paid to attend the cases with the students. When the hospital is opened with an obstetrical ward and an obstetri-

cal interne he can be required to attend as part of his experience.

The teaching of therapeutics is rarely satisfactory in the dispensary because consecutive examinations by the same doctor and the same student is sometimes difficult. A greater difficulty frequently arises from the use of prescription charts. A patient is given "No. 27" and that is all it means to a student whose mind is elsewhere. Each doctor should insist that the student write out in full every prescription and then he should look over it for mistakes and teach both prescription writing and therapeutics.

No junior student should be allowed to pass up until he is able to take a thorough history and do a complete physical examination, including the routine laboratory work, blood pressure and temperature.

The advisability of giving the clinics publicity through the papers is a point not yet solved. It is probably yet not advisable until we can be assured of such an admitting system as will guarantee outside doctors that in so doing we are not depriving them of their rightful income; in other words, until we can be sure that we will not admit patients who are able to pay for professional services. Until that time we had better trust for publicity to our association with such institutions as the Associated Charities and other public charities.

DISCUSSION

Dr. E. H. Cary, Dallas, Tex.—The discussion of a question of this kind resolves itself very largely into a question of experience of what one may have in his own institution. I was very much interested, and I can assure you that the description of the work of the Emory school as explained by the doctor was very complete in every way. Just a few points occur to me which I might add from our standpoint and grouped from our own personal experiences which might be of some service, and which I will attempt to relate.

First, I differ with the essayist as regards getting the best work out of the men. I do not think you can hire a doctor for a small sum of money to do anything. A man must have a better motive than that, and must have a real desire to have service either as a teacher or be very desirous to learn something as a student of medicine under a teacher to get the best service in the dispensary. We have come to the conclusion that it was very much better to require of the men who head the departments that they take a personal interest in the dispensary; that they appear in the dispensary if but for a little time. Require of their assistants that they appear there, and in that way create that feeling of responsibility and respect for responsibility which the chief assumes and which leads every man to do his duty. In following up that I wish to say that one of the most essential things about a dispensary is the proper kind of clerk, and we have fortunately a clerk who records most diligently every man in attendance when he arrives, and he is classified as not arriving if he is fifteen minutes late. In our faculty meetings at the end of the month this is read out along with all the attendance at laboratories and everything else, and I manage to hear just exactly what persons fail to attend the laboratory or clinic, or what not, and it is read out, and each person is given an opportunity to explain. It is also a fact that that report goes to the President of the University, and the President of the University every month has his list, a complete list, of what has been done throughout the whole month regarding the lectures and dispensaries every hour that is supposed to be filled by everybody connected with the college. I found this worked most advantageously. The percentage of attendance is practically 100 % there. In a few instances a man might drop an hour here and there. Always there is a good excuse, for the fact that he is going to be checked up with all his co-workers, and that the University authorities are going to have it on their desks, makes it almost imperative that the hour shall be filled. He has to be a man capacitated for that duty or that service. If he does not do his duty it becomes evident to every one.

We have a small institution, as most of you know. That is, it is a young institution. Our dispensary and clinic building with 85 beds is located on the campus with our hospital, and right back of it. We have in the main hospital about 225 patients, where we have about fifty or sixty patients that we are able to use—charity patients—who, as a rule, do not come from the dispensary. In connection with this hospital the dispensary building is right in the rear, so we can run to it out of the door of the dispensary. We have 20 beds in the clinic building just above the dispensary, which are placed at the service of the different clinicians, and they are not supposed to keep one of these beds longer than four days. A patient comes into the dispensary and is sent into the clinic building for diagnosis and treatment. He can remain four days. Of course, if patients have been operated upon their stay can be extended, and if for any reason can not stay longer it is understood they can go out sooner. It is understood that a patient sent in for diagnosis is supposed to stay there four days. Many go in two, and they have a constant stream going into the clinic possibly for diagnosis.

Dr. Tom A. Williams, Washington, D. C.—I wish to discuss not the portion of the paper which dealt with the administrative features of the dispensary, but only that dealing with its teaching functions. Medicine is an art which can only be learned in its performance and not merely from reading and listening. The art of dealing

with the hospital case is now being well taught in nearly all the different schools, and the position of interne is sought by most graduates still further to improve their practical power in that respect. In the dispensary an effort is now being made to teach students art in dealing with ambulatory patients. In this respect Dr. Elkin's paper presents the excellent attempt being made in his dispensary.

Since the passing of the apprenticeship system, however, the training of the medical man is greatly defective in dealing with certain types of minor ailments which confine the patient to his home. It is in order to mention the manner in which this lack has been met in Edinburgh University that I wish to speak.

There is a compulsory dispensary course in addition to the out-patient course at the Royal Infirmary. The students who take this course attend twice weekly to interview the representatives of patients who desire to be attended in their homes. The patients are allotted by the chief of the service, who is usually a young physician in training for a teaching appointment and licensed by the University to give a qualifying dispensary course. The student is then compelled to visit, examine and possibly diagnose and treat the patients he is given. He is expected to consult the Chief in any difficulty, and the Chief visits the patient in consultation when requested, and in that way teaches the student.

When taking the course I looked upon it at the time as a misfortune that my Chief invariably excused himself from visiting with me the patients in regard to whom I consulted him; but it was a blessing in disguise, for it compelled me to intensive and persistent study of each case for fear of making a mistake. It is to this necessity that may be in part attributable the clinical pertinaciousness which has always characterized the efforts I have made to reach the very bottom of a difficult case. It is only by such a spirit that clinical research may be advanced. It is only by such a spirit that proper service through correct diagnosis can be given to patients. Such thoroughness, now characteristic of hospital work, is most exceptional in dispensary work and is very apt to arise from the somewhat cursory way of dealing with disorders which are not sufficiently severe for hospitalization. By visiting the patients in their homes, the student is thrown upon his own resources, and having abundance of time, he is encouraged to observe minutely, to compare widely, and to think intensively,—things he can not do during the rush of the organized dispensary.

Of course, the dispensary is charging itself with the duty of finding out that no one in a position to pay a doctor is given the service of students. To a young doctor the most important part of his practice is his skillful dealing with sickness in a patient's home; and the American medical school makes no provision for giving practice in this art which has been so efficaciously supplied in the manner stated by the great Edinburgh school which has always aimed to turn out competent professors of medicine, surgery and obstetrics, rather than to exploit its object, due research. In consequence of which its methods of teaching, which long experience has developed, have never been sufficiently appreciated in these latter days. It must be remembered that the great Philadelphia school's traditions were founded almost exclusively upon those of Edinburgh. But it was not possible in the new country of less settled ways to adopt all the expedients found practicable in the abundant, poverty-stricken population of the Edinburgh slums. It is only in recent years that there has been any considerable number of poor people in the United States. Now-a-days it is quite practicable to add to the dispensary service the visiting feature.

The difficulty of providing efficient men for dispensary service and keeping them in regular attendance does not exist in European schools for the reason that the dispensary service is the stepping-stone to professional attainment, and that the doctor who teaches best in the dispensary will have the most students and thereby the greatest amount of hospital teaching later. Again, hasty examination and poor diagnoses are obviated by promotion from the dispensary, so that the man whose records show the most thorough work has the best chances of a visiting physician on the staff and the much-coveted privilege of teaching with the difficult cases. In France the professor himself, who is a very great man, and appointed by the state, usually conducts the dispensary once a week himself and employs the out-patients to illustrate his teaching.

Dr. Wm. R. Houston, Augusta, Ga.—I was especially interested in the point Dr. Cary made as regards the way in which a man can be gotten to work in the dispensaries. In the old days when we were struggling to get started, when the renaissance of medical teaching was in its incipiency, it seemed well-nigh an impossible thing to have men come every day, and day after day, laying their business aside at a fixed time to do the dispensary work, and so we thought of the plan which Dr. Elkin has suggested, a dollar a day to the man who filled his hour and two dollars a day off when he did not come. We have now in our dispensary, as Dr. Cary has, practically a 100 % attendance, and this has been accomplished, as far as I know and believe, by nothing else except going around and talking to the men every day about the work. I get around to see every man every day, to see if he is interested in his cases, and to see if his work is thorough, and it seems to me this interest and oversight is the thing that has brought the men together every day to keep up the clinic work.

We also are situated like Dr. Cary, close to the hospital, so that we can get the patients into the hospital easily for a few days of intensive diagnostic study. In regard to the point brought out by the last speaker and by Dr. Elkin as to the desirability of teaching the fourth-year students in the dispensary rather than in the hospital because cases in their incipiency, when diagnosis is difficult, present themselves rather at

the dispensary, and the more advanced and clearly defined cases are to be found in the wards, I question very much whether we can ever hope to turn out graduates from a medical school that are accomplished physicians. I think we should try to turn them out thoroughly grounded in the plain and essential things. I feel that the dispensary as a teaching agent should be employed to train the young men of the clinical staff as well as the boys in college; the young men that are growing up into the medical faculty have there an opportunity to perfect themselves. They best can take these cases that are obscure and difficult and formulate views as to the diagnosis, but it is not well to introduce the student into too speculative an atmosphere. In the medical clinic we present to the student only selected cases offering some of the simpler problems for solution. The clinical assistants who have no teaching to do in the dispensary see the cases first, and from the large number presented and already worked up, the clinical teacher selects such as are suitable for teaching purposes. For intensive and complete study of most cases surely the hospital is essential, and in the clinic we must be content to present merely certain well-defined groups of symptoms. I think it would not be very wise to make even a fourth-year student try to do something that the best clinicians find themselves often in great difficulty about, and that we had better try to teach them plain and simple things that they can have as a foundation for later more elaborate work.

Dr. E. L. Jagar, Charleston, S. C.—We have a little different schedule of transferring patients. Instead of the Chief of the Clinic transferring the patient or referring the patient from one department to another, the patient is sent to his original department and there his history is taken, the condition of the patient is looked into and remarks made as to the patient's former condition, and then the patient is referred or transferred from that department to the other department. If referred, he keeps his original ticket and gets an extra slip for the other department to which he goes, but if there is a transfer he gets a ticket of admission for that transferred department, and also the history slip is given for that. The great difficulty we have down there is we do not charge the patient any fees whatsoever. The patient comes in, is treated, and gets his medicine, his X-ray examination, and his laboratory work free of charge; but, not having paid for his ticket, he frequently loses it and we often find he has had several preceding tickets.

Dr. Elkin (closing).—I have been very much pleased with the points brought out in this discussion, and I am sure it will be of valuable assistance to us in the future use of this work.

In regard to the plan of paying assistants for services, I only offered this as a suggestion. It has never been tried out and will not be, since I have heard the experiences of others along this line.

It is true that we should get the full co-operation of our assistants in handling the clinic material in the dispensary, but I am sorry to say that we have had considerable difficulty in getting them sufficiently interested to be prompt in filling their hours. Our Chief of Clinics always submits a report at the end of each month, giving the exact number of patients in attendance and the hours that the clinical staff missed or were late. This is read out before the faculty meeting, but has never been submitted to the Trustees. I think the idea of doing this would aid materially in securing a more regular attendance of the staff.

MEDICINE

(INTERNAL DISEASES, PEDIATRICS, NEUROLOGY, DIAGNOSTIC METHODS, ETC.)

THE CLASSIFICATION AND RELATIONS OF CARDIO-VASCULAR-RENAL DISEASE*

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INTRODUCTION

It is the province of the introductory paper in this Symposium to deal with classification and relations. In order that the discussion may profitably develop, a strict delimitation of its field is, of course, desirable. My understanding of the intention of those that have planned the program is that we shall devote the morning to an examination, from all sides, of that particular form of combined involvement of the kidneys, arteries, and heart that begins insidiously, most often in middle life, is associated with a gradually developing arterial hypertension, and that leads finally to sclerosis of the arterioles, general contraction of the kidneys and hypertrophy of the heart, the patients dying after years, or even decades, from any one of several immediate causes (e. g. cerebral apoplexy, myocardial insufficiency, pulmonary edema, uremia or terminal infection).

There are, of course, several other diseases in which disturbances of the heart and kidneys are intimately associated with one another, notably:

1. Chronic passive congestion of the kidneys due to myocardial insufficiency, a condition that I am in the habit of referring to as a "stasis nephropathy";

2. The form of focal glomerulonephritis due to bacterial emboli in cases of viridans endocarditis;

3. Certain forms of acute and chronic disseminated glomerulonephritis that lead to arterial hypertension and cardiac hypertrophy; and

4. The forms of renal disease with scarring that on the one hand follow embolism and multiple renal infarction or, on the other, are due to a patchy atrophy of the kidneys dependent upon a localized rather than a more generally diffuse atherosclerotic involvement of the renal arteries,—conditions often associated with normal blood pressure despite extensive injury to the kidneys.

If in this Symposium we give but scant attention to these other groups, it is not because they are unimportant, but because to include them would so widen the boundaries of the subject as to make it impossible adequately to deal with it in a short time. Some attention will, however, have to be paid to combinations of the main disease that we are to consider with other states, and especially to its combination with myocardial insufficiency on the one hand, and with toxic-degenerative and inflammatory diseases of the kidneys on the other, for it is these associated states that make diagnosis often very difficult and tax to the utmost the therapeutic skill of the clinician.

BRIEF COMMENT ON THE CLINICAL PICTURES MET WITH IN THE DISEASE

I. Earliest Stages.—At the beginning of the disease, those affected may not be conscious of any unpleasant symptoms. Indeed, there may be an apparent increase in the feeling of general well-being and the working capacity of the person, who looks, perhaps, exceedingly well, is of good color, is very active, and declares he never felt better in his life, even scorning the relaxations that men who feel less fit find desirable.

If the existence of the disease is discovered at this stage, it is as a rule found more or less by accident. At an examination for life insurance, or at the regular periodical medical overhauling now often resorted to by sensible people who desire

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to make sure that they are living hygienically, the blood pressure is found to be above 150, or a faint trace of albumin and a few casts may be discovered, at times, in the urine, though in many cases at this stage albuminuria and cylindruria are entirely absent. On inquiry, the person may admit that he has found it necessary to rise once or twice during the night to urinate, or that he has noticed that his urine is a little more abundant and a little paler than it formerly was. If patients at this stage be watched it will be found that the blood pressure is variable and that sometimes it and the urine may be practically normal.

II. Stage of Outspoken Arterial Hypertension.—At this stage the patient may begin to suffer inconvenience from the increase in his blood pressure. Among the commoner complaints are headaches, or a sense of fulness in the head, transient dizziness, fatigability, irritability, and matutinal insomnia,—symptoms that the patient and his friends, and often his physician, are inclined to attribute to a neurasthenic state without understanding of the underlying condition. But if a careful examination be made, the maximal arterial perssure is found to be between 150 and 190, the minimal pressure somewhere between 70 and 100, though no thickening of the radial arteries may be distinguishable; the apex beat is forcible; the aortic second sound is accentuated. The urine may or may not contain a trace of albumin and a few casts, though the patient when his attention is directed to the matter may be conscious of moderate polyuria both by day and by night. Even when the functional renal tests, about which Dr. Geraghty is to speak, are made at this stage, the phenolsulphonephthalein test may yield a normal result and only with the lactose test or with tests made on a renal test diet are clues obtained that indicate a beginning disturbance of renal and circulatory function. The states sometimes referred to by clinicians as "hyperpiesis" or as "essential arterial hypertension" often really belong here.

III. Advanced Stage Before the Appearance of Threatening Complications.—This stage may even have been reached before a patient has had any symptoms that have made him think it worth while to consult a physician, and yet the findings at the first examination may be such as to leave no doubt of the existence of contracted kidneys, of hypertrophied heart, and of sclerosed arterioles. The maximal blood pressure is over 200, the minimal over 100; the left ventricle is demonstrably enlarged; and there is a ringing aortic second sound. There is polyuria and nycturia; the urine is pale, of low specific gravity, and contains a little albumin and a few casts. Though the phenolsulphonephthalein test may show an output at the end of two hours that is nearly normal, other states of renal function show clearly the existence of a fixation of the specific gravity and, perhaps, a deficient elimination of nitrogen. The clinical picture at this stage will scarcely go unrecognized by any well-trained physician of experience.

IV. Advanced Stage with Serious Complications.—At any time after stage III has been reached, the patient may enter the fourth stage in which any one of several possible complications is present. The signs of myocardial insufficiency may develop; a pulmonary edema may suddenly set in; a cerebral apoplexy may come like a "bolt out of the blue;" or after some slight infection (like an influenza) signs of uremic intoxication may appear. In patients at this stage, if any other form of renal disease — say a stasis nephropathy, an acute infectious nephritis, or a toxic tubular degeneration—be superimposed upon the diffusely contracted kidneys, ominous signs of most serious renal insufficiency are likely soon to appear. This is the stage with which the name "chronic Bright's disease" is associated by the laity and accounts for its being so much dreaded.

The complications that occur so alter the clinical picture that unless the patient has been under observation earlier, the diagnostic difficulties may be considerable. To take a single example of such difficulty—suppose edema to be present. If the earlier course of the disease is not known, the physician will have to consider several possibilities, (1) acute nephritis with edema, (2) myocardial insufficiency with edema and stasis nephropathy, (3) subacute or chronic glomerulonephritis with edema, and (4) primary

or secondary contracted kidneys (that are in themselves unassociated with edema) complicated by a myocardial insufficiency or by an acute toxic or inflammatory nephropathy. As a rule a careful analysis of the patient's history, a thorough physical examination, and a period of observation during which tests of renal and cardiac function can be made, will suffice to differentiate. But in such cases the diagnostic acumen of the most experienced clinician may be put to the test, and every one must have real sympathy with the general practitioner who, confronted by such a case, admits that he has difficulty in deciding whether the condition is primarily renal or primarily cardiac or vascular.

CLASSIFICATION AND RELATIONS OF THE DISEASE FROM THE STANDPOINT OF PATHOLOGICAL ANATOMY AND HISTOLOGY

The gross and microscopic changes in the organs of those dying after the disease has reached an advanced stage are so well known that a brief summary of them will suffice for the purposes of this Symposium.

By and large, we deal in the fully developed disease with (1) the so-called "primary contraction of the kidneys," (2) the "Traube heart" with hypertrophy of the left ventricle, and with it sometimes associated also hypertrophy of the right ventricle and of the atria, and (3) sclerotic changes in the arteries, especially in the smaller arteries of the kidneys and the other viscera, earlier known as the "arterio-capillary fibrosis" of Gull and Sutton, more recently described as "sclerosis of the organ-arterioles" in the sense of Jores, or what I am, in my writings, in the habit of designating briefly as "arteriolar sclerosis." Since many patients die (from other causes) in the earlier, or in intermediate, stages of the disease, pathologists have had abundant opportunity to study the organs through the whole series of transitions that occur between organs in which macroscopic and microscopic examinations reveal scarcely anything abnormal recognizable by the technique now in use and organs that manifest the extreme alterations just mentioned as characteristic of the most advanced stages of the disease.*

In the kidneys, the pathological process has been found to consist of a progressive and widely disseminated atrophy of areas of glomeruli and their attached tubules, these areas being gradually replaced by fibrous scars. The end result is a small hard kidney with a thickened and adherent capsule and a rough, granular surface, the depressions between the granules corresponding to the areas of most pronounced atrophy and scarring. Here and there a small cyst may be seen on the surface. On cutting such a kidney open, the cortex especially is seen to be reduced in thickness and to have lost its normal striation. The wide-open arteries with stiff walls may be a prominent feature.

On microscopic examination there are characteristic alterations in the renal arterioles, especially in the vasa afferentia of the glomeruli, the arteriolae rectae, and the arciform arteries. The lumina of these vessels are narrowed; and the intimal coat is thickened. Apparently as a result of under-nutrition of the areas supplied by these sclerosing vessels, disseminated foci of glomerular and tubular atrophy appear. The capillary loops of the glomeruli collapse and become impermeable, the cells between these loops fuse and disappear, so that the glomerular tuft gradually contracts in size and presents a solid appearance, the capsule of the glomerulus meanwhile gradually thickening until, finally, the tuft and its capsule are converted into a small, almost homogeneous, hyaline scar (*nephrocirrhosis glomerularis*). Coincident with the glomerular atrophy, the corresponding uriniferous tubule also undergoes atrophy, its lining epithelium becomes small and cubical in shape, its lumen is reduced in caliber and its membrana propria undergoes hyaline thickening. In the atrophic areas, the interstitial connective tissue proliferates to form a tough scar as the kidney contracts in volume. In the non-atrophic areas, the glomeruli and tubules

*For the details of the alterations as they successively appear, the reader may consult W. G. MacCallum's Text-book of Pathology, J. G. Adami's Text-book of Pathology, and the writings of Aschoff, Councilman, Jores, Klotz, and Ophuls.

look normal, or, more often, show a compensatory hypertrophy.

In this pure form of what I call the arteriolar (sclerotic) nephropathy, the process is then one of widely disseminated arteriolar sclerosis with consecutive renal atrophy and contraction. From the standpoint of pathological anatomical classification *it is not a nephritis*, and though it is often called "chronic interstitial nephritis" or "chronic diffuse nephritis," these names should, in my opinion, not be applied to the condition under study, but should be reserved for certain true inflammatory nephropathies that exist and are correctly designated by such names. It should also be borne in mind, however, that this true arteriolar (sclerotic) nephropathy is frequently combined with true inflammation of the kidney (nephritis) on the one hand and with toxic degenerative lesions of the tubules (nephrosis) on the other. And such combined forms may arise in either one of two ways: (1) a nephritis, or a nephrosis, may be superimposed upon a kidney already the site of an arteriolar sclerotic atrophy, or (2) a patient that has had first a chronic glomerulonephritis leading to secondary contraction of the kidneys may, later on, develop also an arteriolar sclerosis that will tend still further to contract the kidney from atrophy of glomeruli and tubules that have escaped the earlier inflammatory reaction. Indeed, such combined forms of renal atrophy and renal inflammation and degeneration belong among the most malignant types of chronic renal disease that we meet.

The *sclerotic changes in the small organ-arterioles* may be marked before there is any outspoken contraction of the kidneys. The renal arterioles appear to be always involved though to a variable extent in different cases. That the arterioles of the other organs of the body (liver, pancreas, intestines, brain, etc.) sometimes undergo change simultaneously with the renal arterioles seems to be certain, though the experience of pathological anatomists differs regarding the frequency of such changes. Jores, for example, maintains that they are common and almost constant, whereas, Herxheimer asserts that they are less common and extensive than Jores thinks, and Fahr even goes so far as to say that general vascular disease is not usually present. It is interesting that extensive arteriolar sclerosis in the organs can exist in the absence of any marked atherosclerosis of the larger and smaller arteries like the aorta, brachials and radials, and that, on the other hand, very extensive atherosclerotic changes may be present in the latter vessels without sclerosis of the small organ-arterioles and without arterial hypertension. The relation of this arteriolar sclerosis to the high blood pressure of the disease will be discussed further on.

The hypertrophy of the heart in the earlier stages seems to be chiefly an hypertrophy of the left ventricle from overwork. In some cases, and especially in later stages of the disease, the right ventricle and the atria also undergo hypertrophy. This, when found, seems most often to have been due to the development of a chronic insufficiency of the overworked left ventricle, though in some instances it may have been attributable to pulmonary complications or to over stimulation of the heart muscle as a whole by chemical substances circulating in the blood.

CLASSIFICATION AND RELATIONS OF THE DISEASE FROM THE STANDPOINT OF PATHOLOGICAL PHYSIOLOGY

Advances in internal medicine and the rise of pathological physiology and experimental pathology have, of late, impelled us to extend our interest beyond classification based upon structural changes and to strive to arrive at more satisfactory groupings based upon the study of disturbances of function and upon the causes that underlie them. The functional and the genetic standpoints are those that determine the thought and the practice of the most alert clinicians of today.

With the aid of special tests for renal function, it is now possible to examine renal capacity in ways wholly unknown to us only a few years ago. By following the water excretion, the excretion of total solids and of electrolytes, and the excretion of normal constituents of the urine (nitrogenous bodies; sodium chlorid) and of certain foreign substances (phenolsulphonephthalein, lactose, theocin, creatinin, etc.), we can draw valuable conclu-

sions not only regarding the general sufficiency or insufficiency of the renal functions, but also, and especially, regarding the capacity of the kidney to excrete single substances. From these studies we are learning in what direction the kidney should be most protected in the different forms of renal disease. We are also gradually becoming able to correlate certain types of functional disturbance with definite anatomical lesions in the kidney. Though we are far, as yet, from complete correlation of physiological function and structural conditions, and have already learned that serious functional disturbances may be demonstrable in kidneys that anatomically show but little change, and that extensive structural alterations in the kidneys may exist and yet be so compensated for by over-activity of the remaining uninjured portion of the kidney that tests of renal function show no marked abnormalities, still recent studies give us the right to expect that before long we shall have made gratifying progress toward the ideal of an exact topical diagnosis of renal injuries based upon studies of total and special renal function.*

We see in Friedrich v. Müller's grouping of chronic renal diseases, into those that are accompanied by edema and those that run their course without it, an early effort to apply the study of function to classification in the domain of the nephropathies. The disease that we are examining this morning obviously falls within his second group—it is a *non-hydropsical nephropathy* — since when uncomplicated by myocardial insufficiency or by other nephropathies of different etiology, edema is not a feature of this disease (in contrast with the dropsical tendency so characteristic of subacute or subchronic glomerulonephritis.)

Careful studies of the urine in renal diseases early showed that the disease is one characterized by polyuria rather than by oliguria. It is a *polyuric nephropathy* (in contrast with oliguric nephropathies like chronic passive congestion of the kidneys and of the glomerulonephritides). Though the tendency is early toward a "total polyuria," i. e., toward excreting in the urine as much water as is ingested during a renal test diet, the earliest manifestation is that of "nocturnal polyuria," i. e., an excretion, on a special renal test diet, of more than 400 c. c. of urine between 8 P. M. and 8. A. M.

In the early stages there is no albumin in the urine and casts are also absent. Later, a trace of albumin may be present along with a few casts, so that, though strictly speaking the disease becomes *an albuminuric and cylindruric nephropathy*, it differs from most other forms of renal disease by the scantiness of albumin and the sparseness of casts in the urine.

When the disease is well-developed the specific gravity becomes more or less fixed (so-called hyposthenuria), first at a fairly high level, later at a lower level, so that two hourly specimens collected throughout the day may show a specific gravity that remains nearly constant. We have then to deal with *a hyposthenuric nephropathy*. When the fixation of the specific gravity becomes nearly absolute, there is also a tendency toward fixation of the two-hourly quantities of urine (on a renal test diet), i. e., the patient no longer makes a normal polyuric response to the meals ingested.

In this disease, further, sodium chlorid is eliminated very well, though, as the disease advances, an increased salt intake in the food can be compensated for by increased output of salt in the urine only by increasing at the same time the water

*For the details of modern functional renal tests, the reader may consult (1) the chapter on **Examinations of the Excretory Capacity of the Kidneys** in my **Clinical Diagnosis of Internal Diseases**, N. Y., 1916, Vol. II, pp. 863-903 (Vol. III of Appleton's **Monographic Medicine**); (2) the excellent discussions of the whole subject of the **Study of Renal Function** by Thayer, Christian, Janeway, Rowntree and others in Tr. Congr. Am. Physicians and Surgeons, 1913, 1-53; (3) Hedinger and Schlayer's **Ueber die Prufung der Nierentatigkeit durch Probemahlzeit**, Deutsches Arch. f. klin. Med., Leipz., 1914, cxiv, 497-533; (4) the very careful study by H. O. Mosenthal, **Renal Functions as Measured by the Elimination of Fluids, Salt and Nitrogen, and the Specific Gravity of the Urine**, Arch. Int. Med., Chicago, 1915, xvi, 733-774; (5) L. Ambard's **Physiologie normale et pathologique des reins**, Paris, 1914; (6) F. C. McLean's **Numerical Laws Governing the Rate of Excretion of Urea and Chlorides in Man**, J. Exper. M., Lancaster, Pa., 1915, xxii, 212-236; and (7) P. Monakow's **Beitrag zur Kenntniss der Nephropathien**, Deutsches Arch. f. klin. Med., Berl., 1914, xcv, 47; 224.

output, a feature of the hyposthenuria in this form of nephropathy that is characteristic and in marked contrast with the hyposthenuria present in some hydropsical nephropathies in which the salt output can not keep pace with the salt intake when the latter is increased and so sodium chlorid accumulates in the blood and in the tissues and plays a role in the development of edema. Since the total urine in this disease has, except in its end stages, a normal or nearly normal sodium-chlorid content, the disease is neither *a hypochloruric nor a hyperchloremic nephropathy*. Though the percentage of NaCl in the volume unit of urine may be low, the total quantity of salt eliminated in 24 hours is adequate.

On the other hand, many observations have proved that, though in earlier stages of the disease the nitrogenous end products of metabolism may be eliminated in the urine in normal amounts, a time comes when the reduction of renal tissue has become so great that even the compensatory over-activity of the non-atrophic renal tissue is not sufficient to maintain normal nitrogen exretion. At this stage, not only is the nitrogen percentage of the urine diminished, but there is a diminished output of total nitrogen with nitrogen retention in the blood. In other words, the time comes in this disease when we have to deal with a *hypazoturic (and azotemic) nephropathy*, in which the symptoms of "uremia" must be watched for. The hypazoturia may first become noticeable in the night urine. In the very late stages there may be also a slight hypochloruria as well as a hypazoturia, but the latter is always more pronounced than the former. It is surprising how many years the disease may go on without azotemia, and even when in terminal stages azotemia (and sometimes chloremia) becomes outspoken, the condition is often due to a complicating myocardial insufficiency with stasis in the renal vessels or to an inflammatory or a toxic-degenerative nephropathy superimposed upon the arteriolar-sclerotic renal atrophy.

Above all, this disease, which we are now considering from the functional side, is one almost constantly associated with some degree, usually a high grade, of arterial hypertension,—it is a *hypertensive nephropathy*. In the majority of instances, as clinicians work today, a heightened blood pressure is the first sign that attracts their attention to the possible existence of the malady. The significance of hypertension will be dealt with by Dr. Strickler later this morning. Arterial hypertension exists, of course, in a whole series of other conditions also; but, as Romberg several years ago pointed out, a maximal systolic blood pressure persistently maintained above 160 mm. Hg. is associated, in by far the majority of cases, with lesions in the kidneys, and subsequent studies have demonstrated that patients dying after having shown an arterial hypertension of from 180 mm. to 200 mm. Hg. or more, show, at autopsy, in over 80 % of the cases sclerosis of the renal arterioles and a more or less advanced renal atrophy. In the nephroses there need be no hypertension and even in the severe forms of glomerulonephritis, with edema, arterial hypertension of the grade met with in advanced arteriolar sclerotic nephropathy almost never occurs. In the secondary contraction of the kidney following glomerulonephritis, the blood pressure may be high, but in at least some of these cases there is a combination of chronic glomerulonephritis with the arteriolar sclerotic nephropathy.

In how far the arterial hypertension depends upon the renal lesions *per se*, in how far upon sclerosis of the renal arterioles, in how far upon sclerosis of organ arterioles elsewhere (splanchnic domain, brain, etc.), in how far upon toxic influences that may be responsible for the development of the whole pathological process are much mooted questions that can not as yet be entirely satisfactorily answered. The cardiac hypertrophy that occurs in the disease seems to be due to the increased work thrown upon the heart by the increased resistance in the peripheral circulation though, even here, toxic influences directly stimulating the heart to increased exertion may also play a part.*

*For an excellent review of the bibliography on the reciprocal relations of the hypertension, the renal lesions, and the vascular lesions, see Thorel (C.) **Pathologie der Kreislauforgane**, in Lubarsch-Ostertag's Ergeb. der allg. Pathol. u. path. Anat., 1915, xvii, ii, 551-587.

COMMENTS ON THE ETIOLOGY AND PATHOGENESIS OF THE DISEASE

I wish that more were accurately known regarding the causation of, and the precise sequence of chemical and physical happenings in, this remarkable disease. Even briefly to mention all the theories that have been propounded without going into a discussion of the supporting evidence would make me exceed the time limit by which I am bound. I must be content with giving you my impression of the status of the subject at the moment and with confessing to an ignorance that is deplorable.

From what has preceded, it is obvious that we have already gained some real insight into the structural and functional development of the malady. On the functional side we have seen how certain people, usually around middle life, begin to exhibit, while feeling perfectly well, perhaps, an increase in blood pressure and a nocturnal polyuria. A tendency to total polyuria also develops. A trace of albumin and a few casts are present in the urine. As this and the arterial hypertension increase a hyposthenuria gradually develops and tends in the more advanced cases to become absolute, so that the specific gravity, and the quantity, of specimens of urine collected every two hours while the patient is on a renal test diet tend to become fixed. In the late stages of the disease, the specific gravity of the urine may become very low and the percentage of nitrogen in the night urine decreases. The kidneys, through compensatory over-activity of uninjured parts, may remain, however, sufficient for a very long time. Only when a myocardial insufficiency, an intoxication, or an infection that injures the portions of the kidneys still functioning supervenes do we, as a rule, see signs of marked renal insufficiency in the disease. Indeed, though the death may occur from uremic intoxication, it is not uncommon to see the patients die from failure of function of other organs (e. g., cerebral hemorrhage, pulmonary edema, myocardial insufficiency). On the structural side, we have seen how the sclerosis of the small organ arterioles, the disseminated foci of renal atrophy, and the heart hypertrophy gradually develop. How satisfactorily to correlate all these phenomena is a general pathogenetic problem that we are forced to face. In the main, the problem resolves itself, as I see it, into the special issue of the relation of the sclerosis of the small organ-arterioles to the arterial hypertension. What is the origin of the arterial hypertension in the first place? What are the factors that determine the arteriolar sclerosis? What are the reciprocal relations of these two processes? If we could give satisfactory replies to these three questions we should be well on our way to a clear understanding of the malady.

We can be sure, I think, that at least in the earlier period of the disease the hypertension is not anything organically fixed and unalterable, but is rather a functional or dynamic phenomenon, the result of spasm of the smooth muscle of the arterioles. Later on, to be sure, there is organic narrowing of the lumina of the arterioles by sclerosis, but even in advanced stages of the disease the peripheral resistance may in part be dependent upon arteriospasm and not be wholly due to sclerotic thickening of the arteriolar walls.

No matter how important a contributing factor to the hypertension the arteriolar sclerosis may be in advanced cases, either as offering a mechanical obstruction to the circulation in the kidneys (or in the viscera generally), or as leading to toxic vasoconstriction by injuring the kidney and causing retention of metabolic constituents that are normally eliminated, I can but think that the origin of the initial hypertension must be sought elsewhere.

It has been suggested that its cause lies in an increase of epinephrin in the blood, a view supported by the frequently noted concomitant hyperglycemia. An attempt has been made to show that such an epinephrinemia exists, and that there is an hypertrophy of the chromaffin tissues whence epinephrin is derived. The methods in use are faulty and thus far the proof does not seem to me to have been brought.

It may be that some vasoconstrictor substance other than epinephrin accumulates in the blood and starts a vasospasm that leads later to arteriolar sclerosis.

One can think of several possibilities: (1) some vasoconstrictor substance normally produced in the body may for some cause be produced in abnormally large amounts, and the excretory organs be incapable of getting rid of the excess though capable of eliminating normal amounts of it; or (2) some vasoconstrictor substance, normally produced in the body, may be manufactured in normal amounts and accumulate in the blood owing to defective elimination by organs that show no recognizable structural change; or (3) some vasoconstrictor substance not normally present in the body at all may be formed as a result of some as yet unknown disorder of digestion or vice of metabolism; or (4) finally, for some unknown reason, the vessel walls, or the autonomic nervous systems innervating them may, as Schlayer has suggested, become over sensitive to ordinary normal stimuli and show an abnormal excitability, an increased readiness of response, of which hypertension is a manifestation.

There would seem to be a certain family disposition to the disease. On reviewing case histories and autopsies with one of my associates, Dr. M. C. Pincoffs, we have been struck by a distinct tendency to the occurrence of the disease among several brothers and sisters at about the same age.

It would seem probable, then, that the etiological factors that are responsible for the origin of arterial hypertension and of arteriolar sclerosis are the real causes of the disease we are considering. Probably several etiological factors, rather than a single one, may contribute. Three great groups of injuries to the blood vessels are under suspicion: (1) physical and mental overstrain, (2) poisoning by exogenous and endogenous substances, and (3) injury from metabolic products produced in excess. Once hypertension has arisen, and once nutritional disturbances have occurred in the vessel walls, the sclerotic process may begin in the walls of the arterioles. Here the deposit of cholesterin in the tissues of the arterial walls seems to be an occurrence that is constant, and, strange to say, an increase of cholesterin in the blood is common in arteriosclerotic cases. Some have even attributed the origin of arteriosclerosis to a hypercholesterinemia and, just now, internists, chemists, and experimental pathologists are actively investigating the metabolism of cholesterol and allied lipoid substances in the hope that such studies may throw light upon a process as yet all too obscure.

Further than what has been said, our knowledge and theory regarding the classifications and relations of this disease of the blood vessels, kidneys, and heart will scarcely, at present, permit us to go. We may, therefore, now conveniently pass on to the other papers of this Symposium.

This is the first paper of a Symposium on Cardio-Vascular-Renal Disease. The other seven papers, together with all discussions, will appear in future numbers.

LUES AND THE BABY*

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The subject of this paper is one which should be of prime interest to any physician whose professional experiences involve the care of the infant or young child, or in whose responsibilities are included the recognition and treatment of lues in the parenthood of future generations. While this paper primarily concerns lues in the baby, it is clear that this subject also involves the consideration of the parents of the luetic babies before the latter are born.

There are two types of lues in the baby: (1) acquired and (2) congenital or hereditary. The former does not differ from the disease in the adult, as there is always an initial lesion (the chief differential diagnostic symptom between acquired and inherited lues), and the course, symptoms and diagnosis are the same as in the adult. It is a rare type of the disease in infancy.

The latter, referred to as congenital or hereditary, is that type of the disease which is inherited from the parents and is the one which concerns this paper particularly. The two terms, congenital and

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hereditary, are synonymous. One, however, is intended to indicate the presence of the disease at birth and the other the evidences showing themselves later. As it is impossible for the disease inherited to be absent at birth, the needlessness of the use of the two terms is apparent.

In no disease is the necessity for noting and interpreting objective symptoms more essential. In a previous study of over 350 cases, in only 13 % of the positive cases was there an admission on the part of the parents of the existence of the disease, and in the study the utmost care was exercised in the taking of the histories. It is essential, therefore, not to be misled by statements of the parents or guardians of the little patients, but to endeavor to secure as thorough histories as are available, as it is possible that some information may be obtained which may at least suggest the possibility of the existence of the disease. The history should include the age, health, both past and present, of both parents; the number of children, their ages, and condition of their health, both past and present; and the history of miscarriages and still-births with their relation to the pregnancy of the patient.

If all the information from the foregoing examination, is fruitless and beyond suspicion, it must be remembered that the most important evidences are to be obtained in the history and examination of the patient. Is he full-term or premature? What is his state of development? Has he much hair? Are the fontanels abnormally large? Are the sutures unusually opened? Is there a cold in the head or a noise when breathing? Are there any fissures? Is the spleen palpable and is the liver enlarged? The skin eruptions, scaling palms and soles, bone and eye lesions may be present early or appear later.

While it must be remembered that some of the foregoing symptoms may exist in conditions nonluetic, it must be well borne in mind that if any of them are present lues must be excluded rather than proven. In a large series of cases studied very closely with all possible means available for the proper diagnosis, it has been the experience of the writer to observe cases in which there were present one or several of the symptoms already mentioned and usually ascribed to lues and which cases were not luetic, while cases in which hardly any or no symptoms existed have been shown to be positive cases of lues as evidenced by both positive Wassermann and luetin tests. This is not intended to argue that the disease is less frequent than believed (because the writer's opinion is that it often goes unrecognized) nor it is intended to give the impresssion that lues is more prevalent than ordinarily admitted, but simply to impress the point that one should not be too eager to diagnose lues without sufficient corroborative evidence, and on the other hand should not be too anxious to exclude the disease without sufficient deliberation and investigation.

Unquestionably the earlier the diagnosis is made and the disease recognized the better chance has the patient from the prompt and proper treatment.

It is evident that since there is difficulty in securing a frank acknowledgment of the disease in the parents, and since the absence of all, or presence of only a few, of the symptoms usually attributable to lues may not be sufficient to exclude the disease, and since the presence of one or more of the symptoms usually found in the disease is not sufficient to stamp the patient as being luetic, other means by which all doubt may be removed should be employed if available in order to recognize the existence of the malady.

Fortunately, within the past few years there have come to our knowledge certain tests which, when properly made, should be sufficient to show definitely not only if the patient is in an active state of lues as shown by the Wassermann, but whether the patient is either in an active or an inactive state as shown by the luetin test of Noguchi. The diagnosis, therefore, of lues in the baby can easily be established so that the treatment can be promptly instituted.

Probably no greater problem confronts us at this time even in the presence of our knowledge of this disease, its specific organism, its methods of diagnosis, the available drugs which we know to be thoroughly efficient in its treatment, and the vast amount of work done within recent years by the world's best syphilographers than the one of knowing when a case is

cured. Lues long considered an incurable disease must still require a vast amount more of study before it can be stated without fear of contradiction that it is curable in the strictest sense. Evidence is sufficient to warrant the belief that many cases are cured because of those cases known to be reinfected; and surely these instances are incentives to stimulate our hopes for a future uniformity in the cure of the disease. Yet with our knowledge of the activity and inactivity of the disease, of its latency in an individual for months and years, we must bear in mind the possibility of the cases of reinfection as occurring in those individuals in whom the disease may have been latent and in whom there are no reactive bodies in the free circulation to meet the invasion of the spirochaetae pallidae and thereby prevent the reinfection.

At least we have the means by which the disease may be controlled and held in abeyance (inactive and possibly, though unproven, cured). In time, after the examination by autopsy of a great number of cases said to be cured and in which careful records have been kept, will cures be proven and the proper treatment determined. Until then a cure can not be considered positive beyond question.

However, in view of our comparatively recent knowledge in the diagnosis of the disease, of our ability to determine at least its activity, of our means to produce its inactivity and of maintaining it so, we should be greatly encouraged to further investigation leading to the ultimate perfection in the treatment of the disease with its uniform and positive cure.

In a general way the aims in the treatment of lues should be:

1. To destroy the spirochaetae pallidae in the circulation.

2. To prevent the organisms from becoming surrounded by infiltration and thereby removed from the circulation and protected from the influence of spirochaeticides, resulting in latent cases or so-called cures.

3. To promote the absorption of the infiltration or the fibrous character of the lesions surrounding the spirochaetes.

The methods by which this should be accomplished are:

1. The administration of drugs to destroy the organisms in the body: (a) by germicidal effect; and (b) by increasing the resistance on the part of the individual in promoting the reaction to the organism.

2. The introduction of antitoxin through the mother's milk for same purpose as (1); and

3. The administration of drugs to cause an absorption of the infiltration or fibrous lesion surrounding the spirochaetae pallidae, placing them in the circulation so that they may be acted upon by (1) and (2).

The drugs employed in the treatment of lues in the baby are mercury, arsenic and iodin.

1. The mercurials most frequently used are calomel, gray powder, biniodid of mercury, bichlorid of mercury, and mercurial ointment:

2. The arsenic preparations used are salvarsan and neosalvarsan; and

3. Iodin in the form of sodium iodid, potassium iodid and syr. iodid of iron.

The methods of employment of these drugs are:

1. By mouth.
2. On the skin.
3. Intramuscularly.
4. Intravenously.

The drugs given by mouth are calomel in doses of gr. 1/20-1/10 three times daily; gray powder ½ gr. at the same intervals; or bichlorid of mercury 1/200-1/100 gr. and the biniodid of mercury in the same dosage. The iodids, always well diluted, 1 to 2 grains from 6 months to 1 year, three times a day, and the syrup of the iodid of iron from 3 to 6 drops three times a day for the same age.

On the skin mercurial ointment is used for the general treatment in doses of from 10 to 30 grains daily, increasing to the point of tolerance. The employment of this method of administration of mercury is probably the most efficient in children. For the severe pustular rashes baths with from 5 to 10 grs. of bichlorid in five gallons of water daily may be used. Calomel with zinc oxid, equal parts, with twice the quantity of starch on the sores on the buttocks is sufficient, in which cases also black wash may be used. Calomel also on the condylomata may be used.

Intramusclarly the use of salvarsan

has been discontinued because of its irritating effect and because of its causing necrosis of tissue. Neosalvarsan of the two is to be preferred by this method and when used should be given in benzoinol. Bichlorid of mercury, mild chlorid of mercury and benzoate of mercury are also employed, though not so frequently as mercury on the skin.

By far the best drugs and methods beneath the skin are salvarsan and neosalvarsan, the former in doses of 0.01 gram for each kilogram of body weight, and the latter in doses of 0.015 gram for the same weight. It is preferable not to expose the veins if possible, the drugs being given through the veins of the scalp, the external jugular veins and through the fontanel into the longitudinal sinus or into the veins at the bend of the elbow. In employing salvarsan or neosalvarsan, no cure is to be expected from one dose, as three, four, or more, combined with the treatment already mentioned, may be required to produce the desired result.

For convenience the treatment of lues in its relation to the baby should be included under the following headings:

1. Treatment of parents until *cured.*
2. Treatment of the pregnant mother.
3. Treatment of the nursing mother.
4. Treatment of the baby.

In the first group are included not only parents before conception, but all individuals as well who are infected with lues because we do not know when they may become parents and because the disease should be recognized as early as possible and vigorously treated at once, as it is in these instances that complete cures are more likely to occur, due to the destruction of the spirochaetes before they become encapsulated in infiltrated or fibrous organized areas. No individual should be considered inactive or cured until observations over a prolonged period show negative Wassermanns not only in the blood, but in the cerebro-spinal fluid as well.

2. The pregnant mother, if found to have lues, should be given the proper and prompt treatment so that her offspring will be brought to term and in a healthy condition, the fetus probably deriving the benefit of the treatment of the mother: (a) by the antitoxin of the mother; (b) by the influence of the drugs in the mother; and (c) by the promotion of the resistance of the disease upon the part of the fetus by either of the other two.

3. The mother of a luetic child is herself always luetic, as has been shown by many observers, including the writer[1-2] the explanation of the origin of the law of Colle being founded upon the fact that the mother giving birth to a luetic child does not usually show the classical symptoms of the disease and is therefore considered nonluetic. She is luetic, however, as is shown by the Wassermann and luetin tests. The treatment of the pregnant mother and the nursing mother should be vigorously instituted with the hope of developing in them either a diminution of the virulence of the spirochetes by the administration of drugs or an increased resistance of the individual to the disease, the antibodies in the case of the pregnant mother possibly being carried through the placental circulation and thereby offering resistance to the organisms in the fetus, and in the nursing mother the probability of introducing the antitoxin into the baby through the milk. This latter has been the explanation offered by Ehrlich in the instances reported wherein the administration of salvarsan to the nursing mother resulted in the apparent cure in the suckling babe. A few of these cases had been recorded and were included in a previous paper when the writer reported such an instance[3].

While results have not been uniform by this method of treatment, the occasional benefits obtained by this method should warrant its practice in helping the baby, as it is possible that in some instances the treatment of the mother may produce the liberation of sufficient amounts of antitoxin to cause these exceptional results; while in other instances only a little antitoxin may be given the baby through the milk. It may also be that in many cases there may be none eliminated by the breasts. However, if it is possible that some antitoxin may be given the baby in this way in some cases, this method, whenever possible, should be combined with the others more universally used even if for no other reason than that of helping the mother alone.

4. The treatment of the baby should

always be instituted as early as is possible and as soon as the diagonisis is made.

AUTHOR'S METHOD

As soon as it is ascertained that a woman known to be or to have been luetic becomes pregnant, treatment is advised to be instituted at once, combining salvarsan or neosalvarsan with mercury and the iodids. And when the baby is born it is determined as soon as possible whether or not he is luetic by clinical and laboratory evidences, employing both the Wassermann and luetin tests. If the baby is negative he is closely watched and subsequent examinations are made. If the baby is positive, the child and mother are both given salvarsan or neosalvarsan, and the mother mixed treatment and the baby mercurial rubs. There are times, however, when because of the surroundings, medication by mouth is employed instead of the rubs, in which instances calomel or mercury with chalk is given. Occasional Wassermann tests are made to determine when the patient becomes inactive or apparently cured, at which time the treatment is stopped, but observations are continued. There are times when it becomes necessary to discontinue medication in the baby owing to the overaction of the mercury, because of gastro-intestinal symptoms or loss of weight. After the symptoms subside the treatment is begun again.

It has been my custom for many years to employ the rubs in the same place, namely, over the belly, without producing any skin irritation. The plan is to bathe the baby with soap and water, thoroughly rinse the skin, particularly over the belly, to dry it well, rub in the ointment, and put on a flannel binder. This procedure goes on daily, employing the same binder. At the end of a week's time the dose of the ointment is increased and the binder is changed. In this way it can be readily seen that the daily dose of the mercury is increased. This is done until the point of tolerance is reached.

Salvarsan or neosalvarsan should preferably be given intravenously. Many veins may be used, depending upon the individual. A satisfactory vein should be selected either at the bend of the elbow, the jugular, the veins of the scalp, or through the fontanel into the longitudinal sinus. The latter offers a favorable site for infants with open fontanels. In giving the drug intravenously, particular care must be exercised, because should there be any infiltration, damage may be done to the tissues infiltrated. It becomes necessary, therefore, if the patient is unmanageable to employ an anesthetic. It is preferable to give the drug intravenously and without an anesthetic if possible, as the discomfort incident to the anesthetic is then eliminated. In treating the older cases the important question arises whether it is better to give an anesthetic or not? Unless the patient be a suitable one, one able to appreciate the difference between pain and sensation, and one manageable and in whom no psychic shock will be produced, an anesthetic should be used. It is the writer's firm belief that many nervous systems receive psychic shocks in early life which form permanent impressions and from which the nervous systems never recover. Hence the advisability whenever necessary of administering an anesthetic, as it will not only be better for the patient, but also for the technic of the operator.

The drug should be given preferably without exposing the vein, but when this is impossible the vein should be exposed and the drug given as for intravenous infusion.

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THE INFECTIOUSNESS OF TUBERCULOSIS*

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Theobold Smith has expressed with charming simplicity a biological counter-

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part of that poetic vision of the prophet in which is pictured an ultimate Elysium where there shall be "No more sickness, no more pain, no more death." Perhaps the future estate anticipated by the practical man of science, and predicted by the Apostle, are both inspired. It may be that both are the mere speculative expressions of a longing commonly and constantly present in the living. Certain it is that, however accomplished, "'tis a consummation devoutly to be wished."

Theobold Smith points out that many pathogenic microbes are reduced more or less completely to a parasitic life. In order that such species may maintain existence, they must adapt themselves to conditions that allow of invasion of host after host. If such a microbe can not avail itself of some mechanism of transmission, it is sure to perish sooner or later. Now, the more virulent the microbe, the more rapid the death of the host, and the less the chance to escape to new hosts; consequently, there is going on in Nature a constant elimination of the most virulent pathogenic microbes in favor of those that are better adapted to parasitic conditions. The degree of permanence of any species depends upon the perfection of its adaptation to surrounding conditions. At the same time there is taking place a gradual weeding out of the most susceptible hosts, and consequently a small rise in the average general resistance. Without undue stretching of the imagination, it is not difficult to conceive of a state of enlightened development in which, at least, the diseases due to infection are banished, old age deferred, and death results only from the necessary wear and tear incident to life and to violence. We have made smallpox, cholera, yellow fever (diseases that formerly carried off their thousands and their tens of thousands) medical curiosities, and many men who have been practicing medicine for more than a decade have never as much as seen a single specimen of these diseases. Typhus, typhoid fever, diphtheria spell the intelligence and sanitary vigilance of the communities in which they develop. As the years roll on, and knowledge increases, others will be added to the roster of dead diseases.

Tuberculosis, as a disease of man, has been recognized for many centuries, but it remained for Robert Koch to discover the specific infecting agent in 1881. His work on this organism is a classic, and will for all time remain an indestructible monument to his genius. His discovery of the tubercle bacillus as the sole and only cause of tuberculosis, his description of its nature and its life history was so convincing and accurate as to leave little to be added by contemporary or subsequent investigators. He demonstrated that the tubercle bacillus is present in all tuberculous lesions, that it can be cultivated in suitable media outside the body of the infected, and that when introduced into susceptible animals, invariably produced tuberculosis. Among the infectious diseases tuberculosis and leprosy are peculiar in that the presence of the infection in the body of the infected is not made manifest, either locally (as in the case of syphilis) or constitutionally (as in the case of malaria) in a relatively short time.

Acute tuberculosis, in one sense of the term, is really *never acute*, for the tuberculous focus has been present in the body of the infected for months, or perhaps years, and the manifestation only becomes acute after ulceration of some tuberculous focus into the blood or lymph channels. As to the exact time when infection actually first occurs, that is, when the tubercle bacillus first establishes a nidus in the body in which to grow, we can perhaps never know, since the local irritation is not sufficient to attract attention and characteristic constitutional symptoms are delayed in most cases until infection is well advanced.

Many infectious diseases have a definite incubation period (e. g., syphilis, smallpox, etc.), but if tuberculosis has one we are ignorant of it. In spite of this difficulty, however, we know much concerning the infectiousness of this organism that is of value to the infected and to society. Experimental work would lead us to hope that a high degree of artificial protection against the disease is possible, and Baldwin observes that from the present knowledge of specific reaction products against tuberculosis we can say that specific agglutinins and opsonins are readily recognizable in the serum, and that probably lysins or digest-

ing functions exist which act in conjunction with the body cells to produce relative immunity. He further observes that in its last analysis immunity and susceptibility have to do with the cell activities of the animal body. It may include a positive element in that the soil is abnormally favorable by reason of a certain chemical composition or functional excess of the tissue metabolism, or on the other hand a negative one which consists in the absence of some chemical ingredient or weakness of the normal defensive mechanism. No race of people is immune to tuberculosis.

The Jews have a degree of immunity, due doubtless to the antiquity of their civilization, and constant contact with the disease throughout the ages, bringing about, largely through heredity, a relative immunity. Susceptibility, on the other hand, is probably not racial but is directly the result of the exposure of a new race to an unaccustomed infection, examples of which we have in the Negroes brought into civilization from Africa and the North American Indians after contact with the white man. Other influences being equal, all farmers know the abundant harvests that follow the cultivation of new ground. Nearly all bucolic peoples, when adopting urban life, fall victims quicker than those protected by inherited immunity, however small this may be.

Again, among the susceptible and the relatively immune, all will be attacked if the amount and degree of virulence of infection be sufficient. Naturally infection will be greater in any race or nation in which the individual stamina is depleted by disease and unhygienic modes of living.

The tubercle bacillus, the specific or exciting cause of tuberculosis, is a rod-shaped arganism belonging to the vegetable kingdom, and possessing well-marked characteristics which need not be described here. So far as we know, it only grows and multiplies in nature in the body of some animal, though it may be cultivated artificially in suitable media. Outside the body it exists for a longer or shorter time, depending upon the environment. It dies in a few hours when exposed to direct sunlight and fresh air: in damp, dark and ill-ventilated places it may live for many months, and on being swallowed or inhaled may cause tuberculosis.

It differs morphologically and in virulence in different animals, and Koch maintained that tuberculosis could not be produced in man by bovine and other forms of bacilli. Avian tuberculosis is probably not transmissible to man, but Theobold Smith, Ravenel and others have conclusively shown that bovine tuberculosis is transferable to man, and *vice versa*. It is especially desirable to emphasize this point, because of its importance as a factor in the production of tuberculosis in man through the use of beef and milk as articles of food and in other less prolific ways. The tubercle bacillus having found lodgment in the body, may invade any of its tissues with the exception of the nails, the hair and the teeth; even the two former may have their growth interfered with by it, a peculiar silkiness of the hair and clubbing of the finger nails being frequently noted in the symptomatology of the disease.

The bacillus may be thrown off from an animal without the temporary host's being diseased by it, as in sneezing or coughing recently inhaled bacilli; or, in the feces in the case of bacilli that have been injested in the food. But these sources of infection are negligible. The bacilli having *found lodgment, are freed from the body of their host through an ulcerative process,* whether it be into the bronchial tree, into the gastro-intestinal tract, into the blood or lypmh streams (when they pass out in the milk, the urine, or into the body of the fetus *in utero*) ; and by the breaking down of the tuberculous foci in the skin. In whatever way the bacilli may be thrown off from the body of the infected, when they are not destroyed they are a menace to the living, and are responsible for the continuance of the disease.

Infection from improper disposal of fecal discharges and urine is, I believe, negligible, though it can not be denied as a possibility. Infection through inoculation is exceedingly rare, though it unquestionably does occur, e. g., in physicians, nurses, handlers of hides, butchers, etc.

Hereditary infection to say the least, is infrequent, by this being meant infection

by the spermatozoa on the one hand and the ova on the other. Infection by the male element the spermatozoan I believe never takes place. Tuberculosis of the testicle unquestionably does occur and tuberculous semen is discharged; but I do not know of any one's having observed a spermatozoan that was infected; one which carried a tubercle bacillus in its body or on its surface. And even did it occur, such a handicapped spermatozoan would stand little chance in the race for impregnation against its myriad of healthy and unburdened rivals.

Bumgarten claims to have observed tubercle bacilli in the ovum of a rabbit that had been artificially fecundated by tuberculosis semen. This form of infection, if it ever has occurred, is too unlikely to be accepted as a serious factor, and Baldwin observes that it is more than likely that human ova, in which tubercle bacilli might lodge, would be unfruitful.

Infection of the fetus through the placental circulation has been demonstrated in only a few fetuses of man or animals at birth, so that pre-natal infection rarely takes place, and is practically of no consequence in the spread of tuberculosis.

The previously considered avenues of infection being of small account in the general morbidity of the disease, it is profitable now to study the two main avenues through which the infection occurs in Nature, viz., the gastro-enteric and the respiratory. Abundant experimental evidence has shown that it is not only possible, but that tubercle bacilli do frequently penetrate the apparently intact mucous membranes of the body, leaving no trace of their entrance or their exit. This has tended to increase the *estimate* of the number of primary infections through the intestines. Recent study would seem to suggest a selective quality on the part of the bacilli. Since the actual time and place of infection is rarely if ever known, it is not unreasonable to argue that bacilli of a certain origin tend to locate in a habitat that is in keeping with their origin, and in which they would be most congenial or thrive best, as Rosenow has shown to be the case in his researches on streptococcus focal infection.

Be that as it may, there is sufficient pathological and clinical evidence to convince one that a very respectable percentage of tuberculosis is primary in the abdominal viscera. This is shown in intestinal tuberculosis and the frequent occurrence of tuberculosis in the lymphatic structures contiguous to the abdominal viscera, especially in children, without the disease's being present elsewhere in the body. While the gastro-intestinal tract is probably not the most important pathway of entrance of the tubercle bacilli, recent studies have shown that it is a much more important portal than it was formerly considered to be. Von Behring and Roemer have demonstrated the easy permeability of the stomach and intestinal mucosa of the newly born animal for bacteria and unchanged protein. They thence pass to the mesenteric nodes, the thoracic duct, and on into the general circulation: and Baldwin remarks that the weight of opinion was in the past in favor of the lung as the most frequent pathway, because the statistical comparisons of cases of supposedly primary lung and bronchial node diseases were far in excess of those in the intestines. How often they go on to the production of actual disease may still be an open question. At present the figures suggest that one-fourth of all cases of tuberculosis, in children at least, receive the infection by way of the gastro-intestinal route. Infection by this route comes almost entirely through milk, which is so invariably and naturally the sole diet of children. These facts should stimulate health boards to be even more energetic in their cattle and milk inspections.

Infection by the gastro-enteric route occurs from other articles of food and in other ways, e. g., uncooked meat, vegetables and fruit eaten raw or partially cooked, contaminated food of any kind, upon which bacilli may be located either by handling or by currents of dust; the putting into the mouth or using for food, carriers, cooking and dining table utensils that have been contaminated, the putting of unclean fingers or playthings into the mouth, kissing, and the swallowing of infected sputum.

It is well to note, however, that the danger from tuberculous meat has been perhaps overestimated, since tuberculosis of the muscles is rarely present, even in an-

imals well advanced in tuberculosis, and such germs as might be there are quickly killed by the process of cooking to which meat is usually subjected. Furthermore, the operation of our meat inspection laws, municipal, state and national, makes danger from this source still less probable. Again, the habit of kissing, while more or less delectable from an emotional standpoint, is not without its dangers, but its dangers are (as Mark Twain observed when told of the report of his death) greatly exaggerated. If kissing must be indulged in, it should be between equals in the combat; children who are not old enough to object and who cannot weigh the delights on the one hand with the dangers on the other, should not be kissed on the mouth.

Following the period when heredity was held responsible for the spread of tuberculosis, the other very natural conclusion developed that infection in the young in particular occurred through intimate association with others infected (and infected abodes) through the process of inhalation. While the deduction was logical, it did not lay sufficient stress upon the amount of infection that may take place from swallowing infected food and the putting of infected objects into the mouth. The first impulse of the newborn child is to breathe; the second is to eat. Both are instinctive acts in the very young. The early impulse is to put any newly-acquired object into the mouth, the process of swallowing follows as a natural sequence, so that many possibilities for infection occur through the natural impulse of children in this direction.

INHALATION

It has been estimated that a patient with active tuberculosis of the lungs may cough up in twenty-four hours more than a billion tubercle bacilli. The sputum when not properly disposed of goes on the floor and other convenient places. Not all infected objects in a room become so from purposely or carelessly vicious habits, but some of it takes place from the so-called invisable spray that is cast off in the process of coughing or sneezing. And it should here be noted, in order not to make the life of the tuberculous invalid too hard, that the *breath does not contain bacilli* and that *the breath of the tuberculous patient is not infectious;* but that the impalpable sputum sent out as a spray in coughing or sneezing is dangerous, and therefore all the patients should hold a handkerchief or cloth before the face when these processes must be yielded to. Indeed, the habit should be adopted by all the sick and those who may be apparently well. The reasons are obvious and apply for other diseases.

If the sputum is expectorated into a cuspidor or container and is properly disposed of, the individual is not a menace to his associates, as has been amply proven in the Adirondack Cottage Sanitarium and in other places. Sputum cloths or handkerchiefs of paper that may be burned are better.

When the sputum reaches the floors or furniture of a room, it dries and then is carried about by currents of air and by the use of the broom and duster. As the bacilli adhere to particles of dust and other objects they tend to settle to the floor by gravity. The young child's habitat next to its mother's lap or breast is the floor. Hence, in addition to its greater susceptibility, there are greater opportunities for infection in the child.

That the sputum is virulently infective has been proven beyond cavil, by its microscopical character, by animal experimentation and by clinical experience. Dogs and other animals have been made to inhale the atomized sputum of tuberculous patients or pure cultures of dried bacilli with the invariable production of tuberculosis in them. The bacilli in tuberculous patients desiccated and exposed to the sunlight quickly perish, but when contained in moist globules or in dark and damp locations they have been shown to retain their virulence, in some cases as long as nine months.

Bacilli when in streets or gutters therefore quickly lose their virulence; whereas they may keep unsanitary houses infected for months or years, as has been shown in the so-called lung blocks of some of our larger cities. In respiratory tuberculosis the bacilli on being inhaled may settle upon any part of the mucosa of the respiratory tract, pass through it and find lodgment in the near lymphoid structures, in the mucous membrane itself or in the

alveoli of the lungs. The tonsils appear to be a favorite portal of entrance for many organisms, and the tubercle bacillus is no exception.

From animal experimentation and clinical observation, it would appear that tuberculous development does not generally begin in the portal of entry of the bacilli, but rather are they carried by the lymph or blood-streams to the nearest lymph structures, setting up foci in them from which their progeny are distributed. If it be admitted that lymph nodes in the lungs may be secondarily infected from lymphatic structures in the abdomen, I see no way to escape the conclusion that secondary visceral tuberculosis may ensue from primary disease in the lungs. Indeed, it is difficult to understand how patients with active processes in the lungs escape secondary infection of the abdominal viscera, either through the blood and lymph circulation, or through the myriad of bacilli swallowed in the sputum.

Formerly primary infection of the pulmonary alveoli was credited with being operative much more generally than is now believed, though it assuredly does take place there.

CONDITIONS IN THE INDIVIDUAL WHICH AFFECT SUSCEPTIBILITY

Race has already been mentioned, it being considered that the factor operating is due to a new people subjected to an unaccustomed infection rather than to any inherent differences of constitution due to race *per se*. An analogy may be drawn from our next-of-kin, the monkeys. In their jungle life tuberculosis is as much a stranger as the white man; in captivity it is responsible for a vast majority of their deaths.

Age influences the probability of infection; doubtless because of the greater susceptibility of the tissues, and because of the greater opportunities for infection, the young are the most susceptible, e. g., its food, its more confined existence, fondling by its mother, its habits of life, etc., predispose to it. Without prolonged exposure or vice of constitution adults are relatively insusceptible (Baldwin).

Sex seems to play no special role, except as influenced by the greater susceptibility of females in the establishment and termination of the menstrual function and in pregnancy; and in the habits of life which are more confined to the house.

Constitutional diseases that depress the vitality of the individual, e. g., pneumonia, influenza, measles, diabetes, syphilis, malaria, typhoid fever, etc., and traumatism, all predispose to its development.

HABITS

Any variation in the routine of living that puts too great tax upon the bodily functions, that makes waste greater than repair, will to that extent depress the vital forces which normally enable us to resist diseases. One may be a spendthrift of his body quite as effectively as of his bank balance, and both lead alike to bankruptcy; the only difference being that our bodies put up with repeated imposition far more patiently than would any banker.

Excesses of various kinds have been found to increase the susceptibility to tuberculosis,—alcohol, when taken to excess, not only from its injurious effect upon the digestion, but in consequence to the body as a whole. The quantity and quality of food also exercises its influence, as do also tobacco and drug habits, dissipation and unwise prodigal activity of brain and muscle.

CONDITIONS OUTSIDE THE BODY INFLUENCING INFECTION

Climate—No climate is suitable to all cases. If it were, it would soon become overcrowded beyond the bounds of comfort or safety. Each case has its individual characteristics. There are peculiarities of body and temperament that must be considered. In general that climate is best which has the larger number of sunny days and greater equability of temperature, where high winds, excessive humidity and sharp changes of temperature are infrequent. The opposite favor the development of such predisposing diseases as pneumonia, pleurisy, bronchitis, influenza, etc.

Housing—Houses that are too closely crowded together, in which sunlight and fresh air are at a premium, in which the drainage is imperfect, and in which the bad points of the structure are added to by the bad habits of the occupants, in which filth and squalor and poverty re-

side—these are the surroundings in which the tubercle bacilli flourish like the proverbial green bay tree.

Efficient artificial immunity, through vaccines or other agents, has not yet been discovered, in spite of the claims of enthusiasts and others, but it requires no excessive optimism to predict that it will come. And if in the interval of waiting, human beings can be induced to appropriate and apply such knowledge as we have at present concerning the nature and method of dissemination of the tubercle bacilli, it will not require many years before this infecting organism that attacks 50 to 70 % of all human beings shall be banished from the earth.

AUTHORS' ABSTRACTS

Medicine

Some Difficulties in the Diagnosis of Pneumonias. John Staige Davis, University, Va., Virginia Medical Semi-Monthly, October, 1916, p. 313.

The absence of typical physical signs in a considerable proportion of the cases of pneumonia in the University of Virginia Hospital during the winter and spring of 1916 rendered it necessary to rely upon other than the usual means of diagnosis.

In some instances gall stones, appendicitis, and meningitis had been presumptively recognized before admission. Nineteen out of forty-eight cases showed no physical signs whatever when they came in and eight others were obscure in this respect.

A rapid rise of temperature with either chill or pain, a disturbance of the pulse-respiration ratio, and Freeman's post inspiratory pause with the expiratory grunt were most helpful; but the best single guide was discovered in the very high absolute and relative leucocytosis which varied between 13,500 and 74,000 per c. mm. with always 81 to 92 per cent. polymorphonuclears. Over 30,000 white corpuscles to the cubic mm. virtually excluded most other confusing troubles, and saved several patients from surgical interventions when sent in for supposed acute abdominal troubles.

No assistance was obtained from the reduction of the chlorids in the urine which were as often normal in this series.

The X-ray was very helpful and practically disposed of so-called central and concealed pneumonia by showing that the process always begins under the pleura, but gives no characteristic signs until the consolidation reaches the larger bronchial tubes. This suggests a pleurogenous origin and supports the original septicemic theory of the disease.

The net mortality was 6.25 per cent.

Some Observations on the Diseased Conditions of the Salivary Glands and Their Ducts. Dunbar Roy, Atlanta, Ga., The Journal of the Medical Association of Georgia, December, 1916, p. 143.

We will find very little written in medical periodicals about the various pathologic conditions in the mouth associated with diseased conditions of the salivary glands. In the last few years having had several of these cases referred to him, the author concluded that few physicians realize the importance of the salivary glands and their ducts as obscure causes of various symptoms in the oral cavity. The three important salivary glands according to their size are the parotid, submaxillary, and sub-lingual.

Acute inflammation of one or more of these glands is by no means a rare occurrence after infectious diseases and slow fevers. Acute parotitis or mumps sometimes followed by an abscess reveals some very obscure symptoms. In two cases where an operation was done for a supposed subperiosteal abscess of the mastoid, an abscess of the parotid gland was found. Stenosis of and calculi in the ducts of these glands is a frequently overlooked condition and which produces symptoms of swelling and pain at the angle of the jaws. Partial or complete deafness following mumps is a reality and must not be forgotten as a possible sequella in this condition.

Acute inammation with swelling and especially if there is present a salivary calculus beneath the tongue may simulate very definitely a malignant growth and should always be considered. Two such cases were reported. The so-called ranula or cyst beneath the tongue is sometimes difficult to manage. The following method has proven the simplest treatment and with equally good results by the author. The cavity is opened, emptied and then thoroughly swabbed with pure trichlor-acetic acid. This is repeated two or three times if possible.

The Modern Method of Treatment of Disease of the Stomach. Julius Fdiedenwald, Baltimore, Md., The Therapeutic Gazette, February 15, 1916.

In this article, the writer emphasizes the importance of thorough examinations in order to make correct diagnoses, and as a consequence institute the most effective treatment. As an aid in diagnosis and therapeutics the stomach tube has proven to be invaluable.

Some af the salient dietary hints given by the writer follow. In acute gastric disorders the diet should consist of foods which entail the least work on the stomach, and in chronic disturbances the food should be suplied in sufficient quantities in an easily digestable form, so as to maintain the body weight. In cases of oversecretion an abundant protein diet is indicated, and in cases of diminished secretion scraped meats and easily digestible vegetables with large quantities of farinaceous foods should be given. The food taken at body temperature and thoroughly masticated should be eaten at regular intervals.

He calls attention to the fact that the Weir Mitchell rest cure is useful in nervous stomach disorders, and in certain forms of ulcer and gastritis, special emphasis is laid on the recently evolved Sippy treatment for gastric ulcer. The latter consists in protecting the ulcer from the

(Concluded on page 54)

TROPICAL DISEASES AND PUBLIC HEALTH

REPORT OF COMMITTEE ON UNIFORM LAWS FOR THE SOUTHERN STATES*

BY OSCAR DOWLING, M.D., Chairman, Shreveport, La.

Mr. President and Gentlemen:

It will be conceded that public health legislation in the various states, even in the same state, is uncorrelated if not chaotic. The situation is the logical result of the evolution of the science of preventive medicine and spasmodic public response to different phases of its achievements. In this report effort has been made to indicate the line of demarcation between the functions of the national and state governments, and to differentiate between the essential and the non-essential. The recommendations are limited to those features which are believed adaptable and fundamental, and are presented mainly to provoke discussion as to the feasibility of uniform health laws for the Southern states on the subjects named.

As the dual government is basic, it would seem that, at present, the important Federal health policies should include:

1. Maritime and interstate quarantine.
2. Protection of the purity of water supplies.
3. Sanitary regulation of common carriers, railroad and steamship companies.
4. Research problems of common concern to groups or to all of the states.

Quarantine needs no discussion.

The regulation now being enforced concerning the examination of water supply used by common carriers is additional proof that this phase of sanitation effort should be controlled by the National Government.

Present regulation of railroad traffic by the Interstate Commerce Commission, representing the Federal Government, gives evidence that the problems of railway sanitation can be handled best by the same authority.

Federal protection of rivers and lakes, sources of water supply, interstate in location, is acknowledged as the only practical solution.

In view of the fact that the screening of passenger cars has been at different times under consideration by various state boards of health, and as it is a matter in which all Southern states are concerned, and also a question involving interstate transportation, it is recommended that it be referred to the United States Public Health Service for such action as they may deem advisable.

The history of research which deals with the cause and method of prevention of diseases gives conclusive proof that it is both economic and effective to have this work carried on by the Federal authorities.

These activities fall under the supervision and direction of that branch of the Government which was organized to take care of uncommon interests.

Those health policies which have been found economically impracticable for the individual state become necessarily the responsibility of the National Government. Likewise, many health problems of common concern to the country and smaller units must be undertaken by the state. Since a number of these features are common to all the states, or to groups of states, it is clear that uniform laws are a fundamental necessity for effective service.

From the analytical and logical point of view, it seems self-evident that in each state a law creating a department of health, defining broad powers and duties, is the first essential. In the place of special legislation in each state a comprehensive law giving adequate powers, definite and differentiated, would be a basis for more effective organization in the individual state, and would also be a basis for concerted action. Such a law could be

*Read in Section on Public Health, Southern Medical Association, Tenth Annual Meeting, Atlanta, Ga., Nov. 13-16, 1916.

framed to fit the needs of every state in the South. It would standardize important phases of the work and place emphasis upon the fundamentals. The research imperative to intelligent writing of such a law has been in progress several years under the direction of the American Medical Association, and the result is looked forward to with hopeful anticipation. After this, and second to it only because of the necessity of having some machinery to operate it, is the adoption of a uniform model law for the registration of births and deaths. Vital statistics are needed among Southern states for the same well-established, fundamental and general reasons that vital statistics are needed everywhere. And, in addition to these universal needs for vital statistics, the South has two important additional reasons for vital statistics, namely: (1) the race problem, which is practically a Southern problem and the biggest of all Southern problems; and (2) because of the undeserved reputation of the South as more unhealthful than other sections on account of the two peculiarly Southern diseases, malaria and hookworm. A model law on this subject was drafted in 1907. It has since been endorsed by the Census Department of the U. S. Government, the American Medical Association, the American Public Health Association, the American Statistics Association and other organizations interested. It, therefore, represents the combined judgment of all those interested in securing better vital statistic legislation and registration for the United States. This should be adopted in toto by every state. By no other means can there be established a system of registration which will meet the requirements of our growing nation, already in many respects foremost among the greatest, but as yet deplorably lacking in records necessary to the welfare of its citizens. Supplementary to the vital statistics law there should be standardization of reportable diseases. The list of these, methods of collection and compilation and basis of tabulated reports should be agreed upon and be uniform throughout the states. Accurate and complete records are the health officer's most important ally in the prevention of all forms of epidemical diseases.

Standardization of medical practice has made great progress within the last thirty years. The new order of medicine makes new demands. The physician of today must be highly trained. He must know; he must be able to do. The standard grows increasingly higher. A uniform law framed to meet modern conditions and demands would mean professional advancement, increased opportunities for service and power for good.

Another subject which should be considered is the regulation of the sale of patent preparations. In some sections definite action to awaken the public to the viciousness of this traffic has been put into effect. Efforts are being made to control the sale of those which are undoubtedly worthless, harmful or fraudulent. Laws, conservative but adequate as to fundamentals, one to regulate the sale of all medical preparations, and the other to control fraudulent advertising, would help toward the ultimate elimination of these so-called remedies. These interests are strongly entrenched. Time and persistent effort will be needed before the credulous and the ignorant are convinced. A uniform law would have tremendous influence toward that end.

In view of the great diversity of laws pertaining to health in the various states and the increased effectiveness of service which would follow the establishment of uniform laws in the fundamentals of organization, it is recommended that the states of the South enact and put into effect uniform laws pertaining to the four essentials of health work as follows:

1. An act to create a State Department of Health and to provide generally for the conservation and promotion of public health. This law should be comprehensive and its provisions clear and complete. It should give adequate power to the state health department to promote the health interests common to all. Its provisions should include authority to supervise, correlate and consolidate county and other local administrations; to maintain a state laboratory with free distribution of serums; to establish means of control and eradication of tuberculosis and other communicable diseases; to pass upon all plans for water and sewerage systems; to control adulterations of food and drugs; and

it should confer the police power necessary for the protection of public health. The terms of this law should be either explicit and complete, or it should give fundamentals only with power to the state department to formulate and promulgate a code adequate to regulate all features of health activities.

2. The model law for collection of vital statistics, and correlated with this a law standardizing the list of reportable diseases and methods of collection of these reports.

3. A law for the further standardization of medical practice.

4. A law for the control of the sale of medical preparations and the prevention of fraudulent advertising of these remedies.

The subjects outlined above are legitimate subjects for legislation. Agreement upon them as essential and adoption of a uniform law on each by every Southern state would hasten the day of improved sanitation and conservation of public health. But there is one other feature of health work which does not lend itself to legislation—it is the education of the public in the principles of hygiene. The reforming power of instruction is far beyond the reforming power of law, and instruction pertinent and acceptable will be for many years yet the most imperative obligation of every health department.

A STATISTICAL STUDY OF INTESTINAL HELMINTHIASIS.

BY DAVID G. WILLETS, M.D.,
Washington, D. C.

INTRODUCTION

This study of intestinal helminthiasis was made in 1908 and 1909 while the author was Pathologist at the Georgia State Sanitarium, Milledgeville, Ga. Since that time a great deal of work has been done in various parts of the United States upon the same general subject, but more especially upon the incidence of uncinariasis. However, the results of systematic fecal examinations for a Southern institution have not been reported. Hence the findings obtained in this investigation still possess much of their original value. As a matter of fact the only work of a like nature among a similar class of people is that of Stiles and Garrison[1] at the United State Government Hospital for the Insane, Washington, D. C., and the Connecticut Hospital for the Insane, Middleton, Conn. For this reason it is deemed advisable to place on record the results obtained in my work even at this late date. It may be stated that the same general hygienic conditions prevail at the Sanitarium now as when this study was made. Hence it is probable that the endemic infection with helminthic parasites in the institution is about the same now as at that time. Since the results obtained among old cases and recent admissions differed widely, these variations are shown in the tables. The admission cases were examined within 30 days of reception and had never been in the institution previously.

TECHNIQUE

Ten (10) thin cover-slip preparations were examined from the one specimen obtained from each case, delution with sterile water being made when necessary. Examinations were made as quickly as possible after the specimens were received. Some of them were 5 to 20 hours old when examined, however, since they were of necessity obtained at night. The only parasite present which would probably be affected by the age of some of the specimens was *strongyloides*, the embryos of which are apt to degenerate quickly in stools of a constipated patient. Salts were not administered as a routine measure previous to taking the specimens.

PARASITES PRESENT

The parasites present were the whipworm (*Trichiuris*), the hookworm, the eelworm or the common round worm (*Ascaris*), the Cochin China worm (*Strongyloides*), and the dwarf tapeworm (*Hymenolepis*). No infections with the seatworm (*Oxyuris*), or with the larger tapeworms (*Taenia solium, T. saginata*) were found.

FREQUENCY OF INFECTION

Of the 1224 patients examined, 540 (44.12%) were found to be infected with

[1] Bull. Hyg. Lab., U. S. Pub. Hlth & Mar. Hosp. Serv. (1906), 28, 77.

one or more species of parasites. Of those infected, 322 (26.31%) had single infections; 136 (11.11%) double infections; 64 (5.23%) triple infections, and 18 (1.47%) quadruple infections, as shown by Table I.

TABLE I.

INFECTIONS IN 1224 UNSELECTED PATIENTS EXAMINED.

Organism	Number of Infections	Total	Per cent
Hookworm	157		
Trichiuris	100		
Ascaris	42		
Strongyloides	21		
Hymenolepis	2	322	26.31
Trichiuris and Ascaris	65		
Trichiuris and Stronglyoides	27		
Trichiuris and Hookworm	21		
Ascaris and Strongyloides	10		
Ascaris and Hookworm	8		
Strongyloides and Hookworm	3		
Ascaris and Hymenolepis	2	136	11.11
Trichiuris, Ascaris and Strongyloides	42		
Trichiuris, Ascaris and Hookworm	14		
Trichiuris, Strongyloides and Hookworm	6		
Trichiuris, Strongyloides and Hymenolepis	1		
Ascaris, Hookworm and Strongyloides	1	64	5.23
Trichiuris, Ascaris, Strongyloides and Hookworm	17		
Ascaris, Strongyloides, Hookworm and Hymenolepis	1	18	1.47
		540	44.12

From the foregoing table the following showing the number of infections with each of the five parasites found, is obtained:

TABLE II.

FREQUENCY OF THE VARIOUS INFECTIONS IN 1224 PATIENTS EXAMINED.

Parasites	Number	Per cent.
Trichiuris	293	23.94
Hookworm	228	18.63
Ascaris	202	16.50
Strongyloides	129	10.54
Hymenolepis	6	0.49
Total	858	70.10

It thus appears that while 44.12% of the patients examined were infected, there were 70.10 infections per 100 persons.

STRONGYLOIDES

Compared with statistical studies by various investigators throughout the world, the most noteworthy finding at the Georgia Sanitarium is the high percentage (10.54) of persons infected with the Cochin China worm. Most statistical studies conducted in various parts of the world show an infection of less than 1% with this parasite. Garrison[2] found 3% of 4106 cases to harbor it. The percentage of persons infected with this strongyle varied considerably among "old" and "admission" cases as will appear later.

COMPARISON OF FINDINGS WITH THOSE OF STILES AND GARRISON

My results are compared with those of Stiles and Garrison in Table III.

TABLE III.

COMPARISON OF FINDINGS AT THE U. S. GOVERNMENT AND CONNECTICUT HOSPITALS WITH THOSE AT THE GEORGIA SANITARIUM.

Parasites	Government and Connecticut Hospitals		Georgia Sanitarium	
	Number	Per cent	Number	Per cent
Trichiuris	266	7.69	293	23.94
Oxyuris	45	1.30	0	0.00
Hookworm	36	1.04	228	18.63
Ascaris	17	0.49	202	16.50
Hymenolepis	12	0.35	6	0.49
Strongyloides	8	0.23	129	10.54
Taenia	2	0.06	0	0.00

The percentage of *Trichiuris, Ascaris, Strongyloides* and the hookworm found by Stiles and Garrison and at the Georgia Sanitarium vary greatly, a higher percentage being obtained in Georgia in each case. That these variations are due to a high endemic rate of infection in the Sanitarium with the first three parasites and outside the Sanitarium with the hookworm, is indicated by the following table:

TABLE IV.

FREQUENCY OF INFECTION.

Parasites	All Cases			Old Cases			Admission Cases*		
	Examined	Infected		Examined	Infected		Examined	Infected	
		Number	Per Cent		Number	Per Cent		Number	Per Cent
Trichiuris	1224	293	23.94	724	290	40.06	500	3	0.60
Ascaris	1224	202	16.50	724	190	26.24	500	12	2.40
Hookworm	1224	228	18.63	724	117	16.16	500	111	22.20
Strongyloides	1224	129	10.54	724	125	17.27	500	4	0.80
Hymenolepis	1224	6	0.49	724	3	0.41	500	3	0.60
Totals	1224	858	70.10	724	725	100.14	500	133	26.60

*In the Sanitorium not exceeding 30 days.

2Phil. Journ. Sci. Sec. B (1908), 3, 191.

SEVERITY OF INFECTION

As a rule, the infections with the whipworm and with the hookworm were mild; those with the eelworm and some of those with the Cochin China worm, severe. Well marked cases of uncinariasis were rare, and were found almost exclusively among admission patients. Treatment of one case of hookworm disease resulted in the expulsion of approximately 400 adult parasites. Generally only a few worms were recovered. In one case 87, in another 159, round worms were expelled by the use of santonin.

AGE[3]

To determine the percentage of parasites occurring at various ages, four groups were made as follows: (1) under 15, (2) 15 to 30, (3) 31 to 50, and (4) over 50 years of age.

The percentage of persons infected and the number of infections per 100 (Table V.) decreased as the age advanced excepting that, in the admission cases, patients over fifty were infected slightly more frequently than those from 31 to 50 years of age. The incidence of *Trichiuris* (Table VI.) was somewhat irregular in age groups 1 to 3. Otherwise, excluding a few minor variations, the percentages of the several species of parasites present decreased from the first to the fourth age group in each class of patients. Stiles and Garrison found the eelworm, the whipworm, and the dwarf tapeworm to occur less frequently with increase of years; the hookworm to decrease from group 2 to 4.

TABLE V.

AGE DISTRIBUTION OF INFECTIONS

ALL CASES

Age (Years)	Examined	Infected		Total Infections	
		No.	%	No.	%
Under 15	25	20	80.00	39	156.00
15 to 30	420	213	50.71	332	79.10
31 to 50	495	201	40.61	333	67.27
Over 50	284	106	37.32	154	54.23
Totals	1224	540	44.12	858	70.10

OLD CASES

Age (Years)	Examined	Infected		Total Infections	
		No.	%	No.	%
Under 15	18	15	83.33	31	172.22
15 to 30	224	135	60.27	248	110.71
31 to 50	318	180	56.60	310	97.48
Over 50	164	91	55.49	136	82.93
Totals	724	421	58.15	725	100.14

ADMISSION CASES

Age (Years)	Examined	Infected		Total Infections	
		No.	%	No.	%
Under 15	7	5	71.43	8	114.29
15 to 31	196	78	39.80	84	42.86
31 to 50	177	21	11.86	23	12.99
Over 50	120	15	12.50	18	15.00
Totals	500	119	23.80	133	26.60

SEX

The sex distribution of the infections is given in Tables VII. and VIII. The numbers for the whipworm, the round worm, and the Cochin China worm in the admission cases are too few to admit of comparison. Each of these parasites was found in the old cases more frequently among females than males. The converse was true in the occurrence of the hookworm in both old and admission cases.

The variation in distribution according to sex and race appears in Tables XI and XII.

TABLE VII.

SEX DISTRIBUTION OF INFECTIONS

Class and Sex	Examined	Infected		Total Infections	
		No.	%	No.	%
All Cases:					
Males	474	176	37.13	260	54.85
Females	750	364	48.53	598	79.73
Old cases:					
Males	194	99	51.03	177	91.24
Females	530	322	60.75	548	103.40
Admis. cases:					
Males	280	77	27.50	83	29.64
Females	220	42	19.09	50	22.73

RACE

In the general findings, 50% of the Negroes were infected, with 85.63 infections per 100 persons as against 32.44 and 39.27% respectively among the whites. Among the old cases there were 58.28% of the Negroes, as against 57.14 of the whites, and 102.03 per 100 Negroes as compared with 85.71 per 100 whites. However, among the admission cases, the white patients were found to be more frequently infected than the colored. Of 326 white patients, 85, or 26.07%, were infected as against 34, or 19.54%, of 174 Negroes. The variation depended upon the greater frequency of the hookworm among the white than among the colored patients;

3. The age was approximated in the small number of cases in which it was not stated in the records. Most of the patients were Negroes and the approximation was deemed justifiable when it was observed that the ages apparently were not stated accurately in the histories. According to the histories a Negro is 25, 30, 35, etc., rarely 26, 31, 36, etc., as in the case of the histories of white patients. In other words, many Negroes do not know how old they are and it becomes necessary to approximate their ages.

TABLE VI.

AGE DISTRIBUTION OF INFECTIONS

PARASITES AND AGE	ALL CASES			OLD CASES			ADMISSION CASES		
		Infected			Infected			Infected	
	Examined	Number	Per cent.	Examined	Number	Per cent.	Examined	Number	Per cent.
Trichiuris:									
Under 15	25	8	32.00	18	8	44.44	7	0	0.00
15 to 30	420	87	20.71	224	86	38.39	196	1	0.51
31 to 50	495	134	27.07	318	133	41.82	177	1	0.56
Over 50	284	64	22.54	164	63	38.41	120	1	0.83
Ascaris:									
Under 15	25	9	36.00	18	8	44.44	7	1	14.29
15 to 30	420	73	17.38	224	66	29.46	196	7	3.57
31 to 50	495	84	16.97	318	82	25.79	177	2	1.13
Over 50	284	36	12.68	164	34	20.73	120	2	1.67
Hookworm:									
Under 15	25	13	52.00	18	8	44.44	7	5	71.43
15 to 30	420	125	29.76	224	51	22.77	196	74	37.76
31 to 50	495	59	11.92	318	41	12.89	177	18	10.17
Over 50	284	31	10.92	164	17	10.37	120	14	11.67
Strongyloides:									
Under 15	25	6	24.00	18	5	27.78	7	1	14.29
15 to 30	420	45	10.71	224	44	19.64	196	1	0.51
31 to 50	495	55	11.11	318	54	16.98	177	1	0.56
Over 50	284	23	8.10	164	22	13.41	120	1	0.83
Hymenolepis:									
Under 15	25	3	12.00	18	2	11.11	7	1	14.29
15 to 30	420	2	0.48	224	1	0.45	196	1	0.51
31 to 50	495	1	0.20	318	0	0.00	177	1	0.56
Over 50	284	0	0.00	164	0	0.00	120	0	0.00

TABLE VIII.

SEX DISTRIBUTION OF INFECTIONS.

Class and Sex	Examined	Trichiuris		Hookworm		Ascaris		Strongyloides		Hymenolepis	
		No.	%	No.	%	No.	%	No.	%	No.	%
All cases:											
Males	474	56	11.81	119	25.11	53	11.18	30	6.33	2	0.42
Females	750	237	31.60	109	14.53	149	19.87	99	13.20	4	0.53
Old cases:											
Males	194	55	28.35	47	24.23	46	23.71	28	14.43	1	0.52
Females	530	235	44.34	70	13.21	144	27.17	97	18.30	2	0.38
Admission cases:											
Males	280	1	0.36	72	25.71	7	2.50	2	0.71	1	0.36
Females	220	2	0.91	39	17.73	5	2.27	2	0.91	2	0.91

24.23% of the former against 18.39% of the latter harboring this parasite. Among the old cases it is to be noted that *Ascaris* and *Strongyloides* occurred more frequently among colored and *Trichiuris* and the hookworm, among white patients.

The results disagree with those of Stiles and Garrison in every particular. *Trichiuris*, the hookworm and *Ascaris* occurring more frequently among whites, *Strongyloides* among Negroes, and *Hymenolepis* equally in the two races. However, when the results obtained among the admission patients only are considered, and these would appear to represent the relative frequency of the infections in the two races in Georgia, the percentages indicate that *Trichiuris, Ascaris, Strongyloides* and *Hymenolepis* occur more frequently among Negroes and the hookworm[4] oftener in whites.

The tabulation of the race distribution of the infections follows:

TABLE IX.

RACE DISTRIBUTION OF INFECTIONS.

RACE	ALL CASES				
	Examined	Infected		Total Infections	
		No.	%	No.	%
White	410	133	32.44	161	39.27
Colored	814	407	50.00	697	85.63

[4]Strosnider obtained similar results among white and colored school children. See Trans. Med. Soc. of N. C., 1911.

OLD CASES

RACE	Examined	Infected No.	Infected %	Total Infections. No.	Total Infections. %
White	84	48	57.14	72	85.71
Colored	640	373	58.28	653	102.03

ADMISSION CASES

RACE	Examined	Infected No.	Infected %	Total Infections No.	Total Infections %
White	326	85	26.07	89	27.30
Colored	174	34	19.54	44	25.29

RACE AND SEX

The distribution of the infections according to race and sex is given in Tables XI. and XII. Among the old cases colored females were infected more frequently than colored males. Unfortunately, no old cases of white males were examined in the series. In the admission cases, white males gave a higher rate of infection per 100 examined than white females; while the number per 100 was about the same among colored males and females, although there was a higher percentage of colored males than colored females infected.

***Trichiuris, Ascaris* and *Strongyloides* infections were found most frequently among the old colored females. The greater frequency of the hookworm among whites than Negroes held good for both sexes.**

TABLE XI.

RACE AND SEX DISTRIBUTION OF INFECTIONS.

Class, Race and Sex	Examined	Infected No.	Infected %	Total Infect'ns No.	Total Infect'ns %
All cases:					
White:					
Males	200	60	30.00	63	31.50
Females	210	73	34.76	98	46.67
Colored:					
Males	274	116	42.34	197	71.90
Females	540	291	53.89	500	92.59
Old cases:					
White:					
Males	0	0	0.00	0	0.00
Females	84	48	57.14	72	85.71
Colored:					
Males	194	99	51.03	177	91.24
Females	446	274	61.43	476	106.73
Admission cases:					
White:					
Males	200	60	30.00	63	31.50
Females	126	25	19.84	26	20.63
Colored:					
Males	80	17	21.25	20	25.00
Females	94	17	18.09	24	25.53

TABLE X.

RACE DISTRIBUTION OF INFECTIONS.

Class and Race	Examined	Trichiuris No.	Trichiuris %	Hookworm No.	Hookworm %	Ascaris No.	Ascaris %	Strongyloides No.	Strongyloides %	Hymenolepis No.	Hymenolepis %
All cases											
White	410	36	8.8	101	24.63	13	31.71	9	2.20	2	0.49
Colored	814	257	31.57	127	15.60	189	23.22	120	14.74	4	0.49
Old cases:											
White	84	36	42.86	22	26.19	6	7.14	7	8.33	1	1.19
Colored	640	254	39.69	95	14.84	184	28.75	118	18.44	2	0.31
Admission cases:											
White	326	0	0.00	79	24.23	7	2.15	2	0.61	1	0.31
Colored	174	3	1.72	32	18.39	5	2.87	2	1.15	2	1.15

TABLE XII.

RACE AND SEX DISTRIBUTION OF INFECTIONS.

Class, Race and Sex	Examined	Trichiuris No.	Trichiuris %	Hookworm No.	Hookworm %	Ascaris No.	Ascaris %	Strongyloides No.	Strongyloides %	Hymenolepis No.	Hymenolepis %
All cases:											
White:											
Males	200	0	0.00	56	28.00	6	3.00	1	0.50	0	0.00
Females	210	36	17.14	45	21.43	7	3.33	8	3.81	2	0.95
Colored:											
Males	274	56	20.44	63	22.99	47	17.15	29	10.58	2	0.73
Females	540	201	37.22	64	11.85	142	26.30	91	16.85	2	0.37
Old cases:											
White:											
Males	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Females	84	36	42.86	22	26.19	6	7.14	7	8.33	1	1.19
Colored:											
Males	194	55	28.35	47	24.23	46	23.71	28	14.43	1	0.52
Females	446	199	44.62	48	10.76	138	30.94	90	20.18	1	0.22
Admission cases:											
White:											
Males	200	0	0.00	56	28.00	6	3.00	1	0.50	0	0.00
Females	126	0	0.00	23	18.25	1	0.79	1	0.79	1	0.79
Colored:											
Males	80	1	1.25	16	20.00	1	1.25	1	1.25	1	1.25
Females	94	2	2.13	16	17.02	4	4.26	1	1.06	1	1.06

EFFECT OF RESIDENCE IN THE SANITARIUM

For the purpose of determining the influence of residence in the Sanitarium upon the occurrence of intestinal parasites, the patients were separated into seven groups as follows: (1) Those who had been in the Sanitarium not exceeding thirty days, and who had not resided there previously. These are the so-called admission patients, many of whom were examined within two or three days after being received. That is, the infections found in this group are those harbored by the patients when they were admitted. (2) Those who had been in the institution from thirty-one days to one year. (3) From two to three years. (4) From four to six years. (5) From seven to ten years. (6) From eleven to fifteen years. And (7) over fifteen years. The distribution of the infections in these groups is given in Tables XIII. and XIV.

TABLE XIII.

DURATION OF INSTITUTIONAL LIFE.

Duration of Institutional Life	Examin'd	Infected		Total Infections	
		No.	%	No.	%
30 days or less...	500	119	23.80	133	26.60
31 days to 1 yr...	251	113	45.02	173	68.92
2 yrs. to 3 yrs...	146	84	57.53	163	111.64
4 yrs. to 6 yrs...	121	86	71.07	159	131.40
7 yrs. to 10 yrs...	79	51	64.56	94	118.99
11 yrs. to 15 yrs..	57	40	70.18	63	110.53
Over 15 yrs.	70	47	67.14	73	104.29
Admission cases	500	119	23.80	133	26.60
Old cases	724	421	58.15	725	100.14

Of the admission patients, 23.80% were infected with one or more parasites and there were 26.60 infections per 100 persons examined. These percentages constantly and rapidly increased until they were 71.07 and 131.40 respectively among those who had been in the institution from 4 to 6 years.

Considering the various species of parasites, the hookworm decreased from 22.20% in the first group to 2.86% in the last. The rise to 8.77% in the sixth group over 6.33% in the fifth is doubtless accidental. The percentage of *Trichiuris* increased from 0.60 in the first group to 59.65 in the sixth. Its percentage is about equal for the last four groups. The percentage of *Ascaris* increased from 2.40 in the first to 34.18 in the fifth group; and that of *Strongyloides* from 0.80% in the first to 26.45% in the fourth, after which there was a steady decrease to 17.14% in the last group. No infection with *Hymenolepis* ocurred after the expiration of the third year of institutional life.

The variations in the findings among the admission cases and the old ones convincingly proves that there is a high degree of endemic *Trichiuris, Ascaris* and *Strongyloides* infection and a low endemic one with hookworm and *Hymenolepis* at the Sanitarium. In other words, the findings prove that the conditions at the Sanitarium are favorable for the propagation of the whipworm, the eelworm and the Cochin China worm and unfavorable for the propagation of the hookworm and the dwarf tapeworm. In this connection it is to be noted that 640 of the 724 old patients were Negroes. The yards of the buildings for the colored patients are of clay, which is literally baked during the Summer, a condition which is opposed to the propagation of the hookworm. Were the soil conditions favorable for this parasite, it would undoubtedly have been found very frequently among this group of patients, for many, and some severe cases of uncinariasis must have been present among Negro patients during the many years the institution has been in existence. Although the Cochin China worm, like the hookworm,

TABLE XIV.

DURATION OF INSTITUTIONAL LIFE.

Duration of Institutional Life	Exam. ined	Trichiuris		Hookworm		Ascaris		Strongyloides		Hymenolepis	
		No.	%	No.	%	No.	%	No.	%	No.	%
30 days or less	500	3	0.60	111	22.20	12	2.40	4	0.80	3	0.60
31 days to 1 year	251	41	16.33	51	20.32	55	21.91	24	9.56	2	0.80
2 to 3 years	146	63	43.15	31	21.23	41	28.08	27	18.49	1	0.68
4 to 6 years	121	68	56.20	23	19.01	36	29.75	32	26.45	0	0.00
7 to 10 years	79	44	55.70	5	6.33	27	34.18	18	22.78	0	0.00
11 to 15 years	57	34	59.65	5	8.77	12	21.05	12	21.05	0	0.00
Over 15 years	70	40	57.14	2	2.86	19	27.14	12	17.14	0	0.00
Admission cases	500	3	0.60	111	22.20	12	2.40	4	0.80	3	0.60
Old cases	724	290	40.06	117	16.16	190	26.24	125	17.27	3	0.41

undergoes important phases of its life cycle outside the human body, it requires less time to reach the infecting stage than the hookworm, so that the former can flourish under conditions which would be fatal to the latter. As to *Ascaris* and *Trichiuris*, it is well known that their thick-shelled ova are very resistant to external influences and hence survive where thin-shelled ova perish.

In the work of Stiles and Garrison the infections decreased during the first eight years of institutional life and thereafter increased until there were 12.99 per 100 persons among those who had resided in the institution over 15 years as against 12.46 per 100 persons among those with a residence of less than one year's duration. Considered as a whole their findings indicate that the endemic infection in the Government Hospital and the Connecticut Hospital is about the same as in the District of Columbia and the State of Connecticut respectively. The findings at the Georgia State Sanitarium clearly prove the endemic infection there is very much higher than among the inhabitants of Georgia at large.

From the viewpoint of the effect of institutional life upon the rate of infection with each species of parasite found, the results obtained by Stiles and Garrison and those at the Georgia State Sanitarium agree in the decrease of hookworm infections; but, in other respects, they differ.

MEDICAL SIGNIFICANCE

The medical significance of infection with the species of intestinal parasites found is a debated question, excluding alone infection with the hookworm. The personal equation is important as evidenced by the well-recognized fact that, while, logically, severe infections should give rise to more pronounced symptoms than mild ones, heavy infections at times occasion practically no discomfort and mild ones may cause relatively severe symptoms. Among sane persons it is very difficult to make a diagnosis of intestinal helminthiasis without a macroscopic or microscopic examination of the feces. In other words, there is not ordinarily a clear-cut clinical picture present even when both the objective and the subjective symptoms are available. That it is impossible to secure reliable subjective symptoms from most insane patients is realized daily by physicians who care for them. Therefore, it is more difficult to secure a clinical picture of intestinal parasitism among insane than sane individuals.

What effect intestinal helminthiasis has upon the patients at the Georgia State Sanitarium cannot be stated. Since it is impracticable to elicit reliable subjective symptoms from the insane, there remains but one way to determine the significance of intestinal parasitism among them, namely, to treat the cases systematically and to note the results carefully. This work has not been taken up systematically at the institution.

However, instances were not lacking during the time this work was being carried on to convince various members of the Sanitarium staff that, in some instances at least, helminthiasis played no minor role in producing grave conditions. This was true in two severe cases of *Strongyloides* infection, in one of which 189 embryos were seen in a single microscopic field, of several severe infections with *Ascaris*, and of several infections with the hookworm. Helminthiasis was assigned as the cause of the death of a Negro boy who harbored four infections, *Ascaris*, *Trichiuris*, *Strongyloides*, and the hookworm.

The treatment of the vast majority of mental and nervous cases is hygienic and dietetic. Efforts are made to build up the general physical condition of the patient with the hope that as the nutrition improves the mental and nervous symptoms will be less pronounced. Therefore. it is considered to be of particular importance to keep the intestinal tracts of the insane free from parasites. Heiser[5] is of the opinion that the institution of a routine treatment for intestinal parasites was an important factor in lowering the death rate at Bilibid prison, Manila. Rarely had a death at the prison been attributed to intestinal parasites, excepting *Entamoebae*, prior to the institution of the routine treatment. As a matter of fact it is the consensus of opinion that the chief influence of intestinal helminthiasis upon the individual is so to lower the vitality that the individual is more susceptible to other

[5]Annual Rep. P. I. Bur. Hlth. (1907).

diseases. The work in Manila was among persons who, for Filippinos, were in average health. If parasitism is of importance among such a class of people, it is reasonable to believe that it is of a greater significance among the insane, who must be considered as being ill. In my opinion the inauguration of a systematic campaign against helminthiasis at the Georgia State Sanitarium, particularly among the colored patients, would prove that intestinal parasites have an appreciable effect upon the mortality and the morbidity in the institution.

SCHOOL INSPECTION BY COUNTY HEALTH OFFICER AND HOW TO SECURE A CORRECTION OF DEFECTS*

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Perhaps in no other field of scientific research has there been a greater progress in the uplift and welfare of the human race than has been accomplished in recent years through the medical inspection of schools conducted by the county health officer and the correction of the various defects secured by his efforts. Modern school inspection as conducted within the past few years is a true science and so delicate that extreme care and pains should be taken not to interfere with it in a spirit of rashness or ignorance.

Many who have followed school inspection for a livelihood have furnished a fertile field for the talent of the skeptical and hypercritical. The ignorant or reckness school inspector has proven to be really the effective friend of the evils which he has been supposedly opposing. In dealing with school interests, for the school inspector to undertake by crude and ill-considered methods to do what is likely to turn out to be bad, would be to incur the risk of such far-reaching community disaster that it would have been wiser if nothing had been done.

The men who demand the impossible, or undesirable, serve as the allies of the forces which they are opposing, and at the same time they hamper those who would endeavor to find out in a definite way what the wrongs are, and to what extent and in what way they may be corrected. School inspection is not for the purpose of finding the perfect child, although we like to find him, but the purpose is to help those needing some change in living conditions that have escaped the attention of the parents and attending physician.

During the twentieth century marked interest has been shown in the welfare of children, and today educators and social workers receive instruction in health matters as an essential part of their training, while physicians heretofore indifferent as to the diseases and defects found in school children have been awakened by the medical inspection of schools. During the past four or five years personal hygiene has been taught to the children in a manner and with a force never heard of before. The instruction given as to the value of personal cleanliness, the proper exercise, the care and preservation of the mouth and teeth has been most impressive.

The main object of school inspection is the detection and correction of physical defects, the exclusion from school of all communicable disease, the maintenance of proper hygienic conditions and the diagnosis and treatment of children who are mentally or physically deficient and deserve more care and attention than has yet been given them. It is an evident fact that the average physician is poorly equipped to do medical inspection work until actual experience in the schools has opened his eyes.

The frequency of examinations depends largely upon the number of schools and number of inspectors employed. It has been the opinion of many that an annual routine examination should be made; but nowhere, so far as I know, has this been done. Taking the five principal defects: poor vision, obstruction of nose and throat, impaired hearing, decayed teeth, and poor nutrition; considering each in its turn, it

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seems to the writer that the examination of the child every two or three years would be sufficient. The thorough examination of thirty children daily would be a sufficient number and all that a medical inspector should be required to do.

In many instances the medical inspector has requested that the teacher select the children to be examined. This, in the writer's opinion, is a serious and fatal mistake owing to the fact that many serious defects have been found in the child least suspected. All medical inspectors should make a thorough and painstaking examination of each and every child to be found in the school.

It may safely be said that sore throat or rash is sufficient cause and children so afflicted should be excluded from school. Suspicious sore throat should have a culture taken, which in many instances has been the means of detecting latent diphtheria and preventing an epidemic. Many mild cases without a culture have led to disputes between teacher and parents. The principal source of infection is from one child to another and the children themselves should be the chief object of attention. The first and most important step will be for the medical inspector to make a thorough and painstaking survey of the school building and premises to see if they are kept in a sanitary condition, are well ventilated, lighted and heated; seeing that blackboards are properly arranged as to light, and seeing that adjustable desks are properly arranged and made to fit the child instead of having the child fit the desk. Improper seating has been the prime factor in producing such conditions as curvature of the spine and stooping shoulders. He should see that the room is properly ventilated and kept at an even temperature. Many of the evils of school environment may in this way be prevented and in this way school hygiene may be impressed upon the pupils, teachers and the public to a degree that they will all render valuable assistance.

If the states require the attendance of children from six to fourteen years of age, then these children have the right to demand that they be properly housed and given modern school appliances and sanitary conveniences. It should be made clear by the health officer to both teacher and pupil that school conditions that injure the health of the pupil will injure the health of the teacher; and that bad health of a teacher is injurious to the health of the child. This reason alone is sufficient to force teachers to furnish a certificate of health before being accepted by boards of education.

The schools and surroundings that are responsible for injury to the health of either teacher or pupil are inexcusable. Most of the disturbances found in schools are but outward signs of unwholesome physical conditions, for long before physicians can discover pulmonary tuberculosis they can find a depleted vitality which invites this disease.

Before the examinations are made the health officer should instruct the children as to hygiene and sanitation of their home and school as well as the necessary precautions they themselves should take. Many will impart this knowledge to their parents, who in many instances will improve the living conditions in their homes. Then the children should be examined for such defects that are actually proving to be serious and retarding their progress in their studies and growth. If possible, children should be examined only in the presence of members of their family and teacher, as by so doing a more thorough and satisfactory result may be had. But in the average county school this procedure is impossible. Then one is forced to examine in the school which, however, if done in a delicate and tactful manner, will be very satisfactory.

The educator's highest aim has been to train the child to do the right thing at the right time to be efficient. But when he is suffering from defects he at once realizes that the child is greatly handicapped and unable to measure up to the requirements of the present day. It has been clearly shown that headaches, nervous disturbances, stomach disorders, truancy and backwardness have in many instances followed eye strain, which can be corrected by properly fitting glasses.

In making the examination the best light should be secured. If the letters on Snellen's test card can not be read at the required distance, then have the child move forward or backward as the case may re-

quire. Scrutinize for a strained or worried expression while the child is reading or writing; observe unnatural position and improper distance (more or less than nine inches) from eye to book.

It is well to bear in mind that tonsils and adenoids are lymphatic glands ever present in children and when enlarged or diseased may produce the most alarming conditions. When tonsils or adenoids are enlarged and obstruct the breathing or impair the health of the child they should at once be removed. The large tonsils are not to be looked upon with half the suspicion as the buried tonsils which are diseased, having pockets or cripts which are the constant source of infection and should be removed at once. Adenoids, when impinging upon the opening of the Eustachian tube, are the cause of impaired hearing, also causing a broadening of the bridge of the nose and preventing nasal breathing, which is responsible for an offensive discharge. These conditions should be corrected at an early date.

In making the examination, the child should be required to open the mouth wide with tongue protruding, then the wooden tongue depressor should be used to hold down the base of the tongue, when a thorough examination can be made. Instruments that have to be sterilized should not be used in school inspection, for the reason disease may be transmitted from one child to another, and by using the same tongue depressor the child is not favorably impressed.

Many ways have been suggested for testing defective hearing, but it has been found that the most accurate is the watch which has been used and its standard distance of normal hearing ascertained. The test should be made by the examiner standing behind the child, closing one ear, which should be done by the thumb. The eyes, where the child is not frightened, should be covered. Then he holds a watch to the ear so that the child may know what he is expected to hear. Finally he places the watch at a distance, bringing it slowly closer until it can be heard. Then the record as to degree of deafness may be recorded.

Dental decay is an unnatural occurrence and is caused largely by improper habits existing in civilized life, and is usually constitutional, due to lack of vital resistance which gives the tissues of the body the power of resistance to bacteria. For this reason the teeth of poorly nourished children show decay. Dental decay in school children is one of the most important defects to be found, as it is the primary cause of many nervous disorders and derangements of digestion due to foods not being masticated and carried into the stomach germ-laden with putrid material from the cavities of the teeth. Poor nutrition is due to improper diet, impure air and lack of the proper kind of exercise. Time will not permit the discussion of many other minor defects which should be closely observed by the medical examiner.

The problem of securing the correction of defects found in school children has been extremely difficult and has caused the health officer much anxiety and annoyance. To be successful in this undertaking the examiner must first have the confidence of the teacher and children, and each must thoroughly understand the other to accomplish this great work. Then the next important move would be to have the attending family physician to approve the health officer's work, at the same time suggesting to the family who are constantly consulting their physician after receiving the notice of defects, not to delay but at once to have the correction of the existing defects made. It is a very good idea to have the parents present when the children are examined that the defects may be fully explained and when possible shown. When this is done, the mother knows more of the existing condition of her child and will more readily consent to have the defects corrected. After each examination the parent should be notified by personal letter as to the findings, and when possible the attending physician should be notified and the condition explained to him in order that his assistance may be elicited in influencing the parents.

All county health officers should have the assistance of an efficient and sympathetic trained nurse that she may follow up the children who have been found to be defective and explain to the mothers the great importance of having an early correction of the defects found. When

possible a free dispensary should be established that the people who are unable to pay for an operation may take their children and have all defects corrected. This would be the means of securing the correction of many defects and would render great assistance to the deserving. When a child with pronounced defects can be selected and the corrections made, improvement will most assuredly follow. And this, thoroughly explained to other parents, will cause them readily to consent to having the corrections made in their child. The most important factor of all is to have the co-operation and assistance of the tactful teacher, who can accomplish more in the way of securing a correction of defects than any one connected with this great work.

DISCUSSION

Dr. George M. Cooper, Raleigh, North Carolina.—The two most important facts brought out in Dr. Sevier's paper are, first, the object of medical school inspection. For instance, he says the main object is to detect physical defects, and then to teach personal hygiene and sanitation. The next thing he says is to correct these defects, and naturally he endorses the plan of a visiting nurse and of a free dispensary. I think that is one of the most important statements that he has made in his paper. He endorses the plan of a free dispensary for the treatment of poor children and the employment of a visiting nurse. He made the observation that you can teach more personal hygiene and better sanitation in the school than you can anywhere else, which is certainly a fact. Again, another important observation he made is the fact that there is a vast difference between a diseased tonsil and an enlarged tonsil in children, and again he says, the average doctor in ordinary active practice is not capable of making a proper inspection. I want to add my endorsement to that, for I believe it takes just as much special study, just as much ability, and more common sense, and tact to make a good medical school inspector, than it does to make an eye specialist or a tuberculosis expert.

Another thing is with reference to the examination of children in the presence of other children. I think that can be done if it is done tactfully. In the inspection of several thousand children myself I made it a point never to tell a child that he has hookworm in the presence of other children because they laugh at him; it makes the little patient feel bad. I can tell the children that he has defective teeth before the whole group and advise him to go to a dentist. But the idea of examining them in the presence of other children is a good one because it tends to oppose snobbery and to build up a principle of democracy, and that is a great saving grace of the public schools.

In conclusion, I want to endorse again and emphasize the importance of a school nurse and a free dispensary, especially a dental dispensary.

Dr. Roy K. Flannagan, Assistant State Health Commissioner, Richmond, Va.—This question of school inspection has been under consideration for a good long while. It so happens that in the past four years in Virginia we have taken seven counties and intensively inspected the school children, white and black, in them, and we have obtained some very interesting data in this connection. One of the most startling facts developed is that our country children are a great deal more defective than the children of the cities where school inspection has been done for several years past. The number of defects as shown by our tabulation is much higher among the country children. The appalling thing about this whole situation is that practically nothing has been done to arouse the country districts to this tremendous need, and so the great open spaces of the land where most of the people in the United States live are practically untouched by school inspection, and unless something practical is done about it now, we are going to have for the immediate future the same large proportion of substandard manhood and womanhood that we have today. There is every indication that there will be no comprehensive rural medical school inspection for another generation in the South. We are just beginning to make a small dent in the problem now, and there is certainly going to be one more generation that will grow up in our country districts uninspected by doctors. We have but to learn how few places have had this inspection fully to realize the truth of this observation. There is nothing occult about the inspection of school children. It is simply an intelligent "mother diagnosis". The intelligent mother, knowing her child, when it is well, perceives when the child is not normal and sends for the doctor. School inspection simply determines the more obvious defects of the child, defects of the eyes, ears, nose, throat and skin as well as the state of its nutrition, the condition of its teeth and of its bony structure. Any intelligent person knows if he will only look into the child's throat whether it has enlarged tonsils or not. A wayfaring man though a fool can tell a decayed tooth when he sees it. Almost anybody can tell when a person is thin or pale or has a skin disease, and five minutes' instruction will enable anyone to test for near-sightedness with a Snellens card or use a watch to discover deafness.

Putting aside then the question of comprehensive school examination of children in the country as a dream of the future, what may we do to help these children now and until public sentiment catches up? Appreciating then that an intelligent layman can do school inspection fairly well, is there not an intelligent layman at hand who may be trusted to do it. The teacher is there on the job, paid and intelligent. She can do this work and if no one else does it, she must undertake it, if for no other reason than as an aid to her own efficiency. She will not do it as well as a doctor or a trained nurse could, but she can accomplish it well enough to find 75 per cent. of defects if she will but put her mind to it, and 25 per cent. undetected defects is better than practically 100 per cent. as at present.

Country health organization is coming. The rural school nurse is coming. The whole-time health officer is on the way, but it will be quite a while yet before they arrive. In the meantime let the doctor go to the school house, and if he has not time to inspect the children himself, let him instruct the teacher in the common manifestations of ill health and defectiveness. His practice will thus benefit, the school work will benefit, and above all else the strong man and woman straightened up out of a defective childhood will benefit, and the community at large reap the reward in the strength and efficiency of a citizen otherwise doomed to weakness and mediocrity.

Dr. Charles L. Minor, Asheville, N. C.—I am not so pessimistic on this subject as Dr. Flannagan, although I fully realize the importance of what he has said. To show how intelligent people can neglect bad malformations of the teeth, I recall a charming woman of the upper class, a patient of mine, nearly forty years of age, who has ample means and yet whose face is badly distorted by misplaced teeth. Until thirty years of age she got no intelligent supervision or instruction, either from her mother, her teachers or her doctor, nor did she know that her face should be, and could be, reformed. However, the world is growing better and we are learning more what we can do in these cases, so that I am optimistic about the future.

Doubtless in that future all children will have dentists to care for their teeth if they show any malformation, and to straighten out badly formed jaws, and in this way to improve many pathological conditions which can be prevented by proper attention to the condition of the teeth, but the trouble is that while we doctors know these facts the general public do not, and they do not get spread among the public as they should; if at meetings like this we could get the mothers to come and listen, and the teachers, the public would profit a great deal more than by us doctors hearing it, who know it already.

Returning to Dr. Sevier, I have watched his work carefully and I have known how much he has done for the health and betterment of our County, but he does not get the adequate salary, or all those facilities and assistances which he ought to have, but I take off my hat to him for the work he is doing in our County without these things.

Since it seems unlikely that we will teach our teachers how to find out many of these conditions, it is most important that every family doctor looks upon it as his duty and his business to keep the well children of his families well and not only to doctor them after they get sick, to watch their throats, the development of their jaws, the shape of their chests and things of this sort; and we must educate the mothers and fathers to expect this of the doctors. Indeed the whole question it seems to me resolves itself into one of teaching, teaching and teaching, and that is what the medical profession is coming to, and the better teachers we are, the better doctors we will be.

Dr. Henry S. Abercrombie, Petrey, Alabama.—As to the question of detecting and overcoming defects in school children, we have had medical inspection in Glenn County for the last three years, and I have found many defects similar to those that have been mentioned among school children, and we have tried to devise some means of providing treatment for children whose parents are not able to pay for it. We have devised this plan: anybody in our county may have a child's teeth worked upon by a dentist. A child may have its tonsils removed, if diseased, by a physician; it may have its eyes fitted with glasses, whose parents are not able to pay for it. The poor people are taking advantage of this and we are getting results. This is a means of preventing pauperism among a great many of these people. We have a system that if they can pay a part of the expense, all right, but we will let them in to get the advantages of treatment even though they cannot pay. The system we work is this: they go to the county superintendent and health officer and get the treatment absolutely free.

Dr. L. T. Stem, Chattanooga, Tennessee.—The question of adenoids and tonsils has been one we have been taking up in Chattanooga just recently. The Commissioner of Health and Education has adopted the system of employing a nurse and inspecting the school children of Chattanooga. We have a free clinic composed of reputable men in the medical profession. We have four or five men who devote themselves to the eye, ear, nose and throat; we have others who devote themselves to pediatrics, and four or five men who devote themselves to practically every branch in medicine. Being one of the members of the staff on pediatrics I have inspected in the last month or six weeks possibly forty to sixty children sent there on account of being dull in school and in practically all of these children we have found decayed teeth, enlarged or diseased tonsils and adenoids. We have found a larger percentage of defects in whites than in colored children. We have found that practically seventy-five per cent. of the Negro children that come to the clinic for treatment were syphilitic, and practically all of these children have Hutchinson teeth and a good many of them have the skin lesions.

As to the question of tuberculosis, in some of our country schools in Tennessee the percentage of tuberculosis is amazing. In the past fall two children out of four hundred in one of the best schools in our county we found to be tuberculous when they came to the clinic, and on going over their chests we found they had tuberculous lesions, and both of these children come out of school with an afternoon temperature of 101°. One of these children had tuberculosis of the bones, other glandular involvement of neck and abscess formations. Both of these were refused admittance in Pine Breeze Local Tuberculosis Sanitarium because of open lesions and yet they were in school. On going to the home of these children we found that their mother was tuberculous. Both children came from the same home.

One thing we cannot stress too strongly is the importance of employing a nurse and physicians to inspect school children. As the doctor has said, we are a generation behind the times, but if we medical men would go to our county superintendents when they have their regular monthly meetings and go to their institutes or local meetings

and emphasize these things that have been neglected so long, much good could be accomplished. Our own mothers have been able to find lots of things, and if we could urge teachers to look for these defects and notify parents to have their child examined by a physician we will have done much toward remedying the conditions.

Dr. D. E. Sevier, Asheville, N. C. (Closing).—I wish to thank the gentlemen very much for their liberal discussion. If you will pardon me for a moment, I will tell you why you have no county physician or whole time health officer in many of the counties. It has been carried into politics. In the county of Buncombe the health officer was appointed over the protest of all politicians, all ringsters, and a goodly number of the medical men of that county, and that was done by Dr. L. B. McBrayer, who was a member of the Buncombe County Board of Health. I want to say that Dr. McBrayer's name is a household word in the county of Buncombe and will go down in history as the founder of preventive measures in the county of Buncombe.

AUTHORS' ABSTRACTS

Medicine

(Concluded from page 39)

acid corrosion until it has healed, by shielding it from the corrosive effect of the gastric secretion. Feeding through an Einhorn duodenal tube is indicated in certain ulcer cases.

The following are the remedies he recommends: (1) Buttermilk or the Bulgarian tablets for its favorable effect on intestinal decomposition; (2) Paraffin oil for intestinal stasis; (3) Olive oil as a food; (4) Atropine as an antispasmodic and as an antisecretory drug; (5) Hydrochloric acid as an efficient drug in certain gastritis cases to be used in combination with pepsin after meals, (6) abdominal supports in Glenard's disease, and (7) mineral waters.

The indications for surgical intervention are as follows: (1) Obstruction either cardiac or pyloric; (2) In gastric ulcer with perforation or pyloric obstruction, and in ulcers defying thorough medical treatment (3) Early gastric cancer.

"The Treatment of Graves' Disease by the Roentgen Ray." Malcolm Seymour, Boston, Mass., The Boston Medical and Surgical Journal, October, 1916, p. 568.

The treatment of Graves' disease by the Roentgen ray has been used for many years, but due to the inaccuracy in dosage, uniform results have not been obtained until recently.

The author observed 80 cases which received at least two applications, the average number of treatments or applications being four. Of these 80 cases, all showed improvement with the exception of seven. In one case the disease was complicated by asthma and one had active pulmonary tuberculosis. Five cases showed no change. Four were born in Russia. One case had three applications and showed absolutely no change. Of the 80 cases, eight were absolutely cured of their symptoms, and nearly all gained in weight. The average gain was seven pounds. One case gained twenty-five pounds. The average pulse rate lowering being 12 beats, the greatest being 52. The method of application was by means of a Coolidge tube. The average dosage amounted to about 4 H., or 5 Holzknecht or 10x Kienbock of 1B Sabourand-Noire.

In all cases, the target of the tube was a distance of 10 inches from the skin, and a filter of 4 mm. of aluminum and 1 thickness of sole leather was interposed. The dose was not repeated inside of three or four weeks. Under general treatment, most of the patients did not change their modes of living, excepting the diet, which was increased or favorably rearranged, and treatment was directed toward anemia, which was present in a considerable number of cases.

The X-ray treatment of Graves' disease should not be undertaken except by those thoroughly experienced in Roentgen therapy. The dosage must be accurately measured, for if the rays are applied in a haphazzard manner without knowledge of the total dosage, the result may be unsatisfactory, resulting in serious burns or in total destruction of the gland, causing myxedema.

The diagnosis of hyperthyroidism is frequently overlooked, and is mistaken for so-called neurasthenia, and is especially confused with early pulmonary tuberculosis.

Conclusions: The pulse rate is nearly always reduced, and this, almost always at once. The tremor and nervous symptoms improve from the start. The gland rapidly diminishes in size in some cases, remains unaffected in others, but if hard, tense and throbbing, the throbbing diminishes and the gland becomes softer. The body weight practically always immediately increases.

Advantages of this treatment:

1. There are no fatalities.
2. There is no resulting scar, as after operation.
3. It does not interfere with the patient's occupation.
4. It is painless and causes very little inconvenience to patient.
5. If unsuccessful, an operation may be done with less risk, because of the favorable action of the X-ray on the thymus gland.

SURGERY, GYNECOLOGY, OBSTETRICS AND GENITO-URINARY DISEASES

EXCISION OF THE UPPER JAW*

By John W. Price, Jr., M.D., F.A.C.S.,
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Louisville, Ky.

This operation was originally described by Lizar[1] in 1826, but was first performed independently of Lizar by Gensoul[2] in 1827. Heyfelder[3], in 1844, was the first one to perform excision of both superior maxillary bones at one sitting. Blaudin[4], in 1834, practically originated the operation done today. The English text-books describe the operation as Ferguson's, while the French text-books speak of it as Nelaton's or Liston's. Several cutaneous incisions have been described by Kocher, Weber and Ollier.

The mortality of the operation at Gottingen was estimated to be 23 to 31 % in 74 cases. Sixteen died from lung complications. Scudder states that in the 230 cases collected by Bryant[14] the mortality was 14 %. Krönlein[5] has had a mortality of 2.8 %.

The conditions requiring this operation are usually malignant growths. Carcinoma developing in the antrum of Highmore is perhaps the most frequent. The operation has not been resorted to so early as it should have been in the great majority of cases which have been reported. The description of the operation in some of the text-books is so hazy that one is led to believe that the operation is far more formidable than it actually is. This failure of a full understanding of the procedure has no doubt been a large factor in preventing these cases from reaching a surgeon in the early stages of the tumor formation. Practically all of the text-books, Johnson[6], Treves[7] and Ashhurst[9], recommend preliminary ligation of the carotids. Blair[10] quotes Schlatter as citing Reyher v. Lesser, Bryant, Schönborn, Kocher and Fritz König, as well as himself, as being strongly in favor of preliminary constriction of the carotids. Scudder[8] advises temporary compression of the common carotid. This is a serious undertaking itself, and tends to frighten the family physician, and nine out of ten say they do not believe the results justify the operation, and in this way constant delays occur.

Blair[11] quotes Schlatter to the effect that in the Zurich clinic recurrences took place after an average of three and nine-tenths months, in all cases when a malignant tumor had involved the entire jaw. With an early diagnosis and operation, 50 % remained well for three years or longer. The prognosis for sarcoma is better than carcinoma.

We would suggest that the surgeon should thoroughly familiarize himself with the procedures of this operation on the cadaver before undertaking the responsibility of the operation. It requires on the part of the surgeon, more than almost any other surgical procedure, a definite plan of action which may be carried out speedily but without haste.

PREPARATION OF THE PATIENT FOR THE OPERATION

For several days before the operation the teeth should be thoroughly overhauled and the mouth cleansed repeatedly before and after taking food. The lower bowel should be thoroughly cleansed as before any other operation.

The field of operation is to be prepared the day before the operation, and the preparation repeated the morning of the operation. In case the patient is a man, the face should be shaved at least four or five hours before the operation, and then the iodin, 3.5 % solution, can be used immediately before the operation is begun.

*Read in Section on Surgery, Southern Medical Association, Tenth Annual Meeting, Atlanta, Ga., Nov. 13-16, 1916.

PRELIMINARY MEASURES

Sometimes, before undertaking the actual operation, operators do a tracheotomy or laryngotomy as recommended by F. S. Eve[15], on the ground that it is a precaution against the patient's suffocating from hemorrhage. As stated above, others strongly advise preliminary ligation of either the common or external carotid artery. We believe that both of these measures are unnecessary and add considerably to the risks of the operation. Zimmermann reports, after ligation of the common carotid, 31 % of deaths; 26 % of these showed brain symptoms, and 11.6 % showed cerebral softening (Scudder 292). If the external carotid is ligated too near the bifurcation of the common carotid there is danger of thrombosis of the internal carotid, or embolism.

THE ASSISTANTS

Two trained surgical assistants are sufficient to cope with any condition which might arise during the operation. The first of the assistants should be sponging and catching the vessels with artery forceps while the second assistant sponges and passes instruments. The hemorrhage at any stage of the operation can be temporarily controlled by direct compression with gauze. One sterile surgical nurse is sufficient to supply the operator and assistants with sponges and suture material.

ANESTHESIA

The choice of an anesthetic and the method of administering it will vary according to the condition of the patient. Heuten in 1867 suggested that the operation be done entirely without an anesthetic.

If there has been previous to the operation a foul discharge through the nose into the mouth, I should oppose intratracheal anesthesia as recommended by W. S. Thomas[12] on the ground that we increase the danger of post-operative pneumonia. Post-operative pneumonia has been chiefly responsible for the high mortality in this operation. Naso-pharangeal tubage is also contraindicated where there is suppuration in the nose; but in suitable cases it may be as satisfactorily employed with ether as the intra-tracheal method, and should be the method of choice. If it is inadvisable to use the naso-pharangeal tubage, chloroform may be given by the open method. If this method is used there must be two anesthetists whose gloved hands are sterile and the frame and gauze which is applied to the face must also be sterilized. If the frame and gauze become soiled, they must be immediately changed, and one sterile anesthetist can relieve the other whenever necessary.

THE POSITION OF THE PATIENT ON TABLE

We found that position in which the patient lies flat on the back upon the operating table with the head elevated upon one or two small pillows to be perfectly satisfactory.

Excision of the Upper Jaw. Photo taken seven days after operation.

OPERATION

The steps of the operation are as follows: The incision is begun over the malar bone, which is immediately exposed and divided to the spheno-maxillary fissure. The incision is then continued toward the nose about one-quarter of an inch below the infra-orbital process. The frontal plate beneath the orbital ridge is then divided with the chisel, if the contents of the orbit are not to be removed. The incision is then carried along the groove between the nose and cheek to the ala of

the nose. The chisel is then used to divide the nasal process. So far there has been no hemorrhage which could not easily be controlled. Next, clamp a pair of forceps over the upper lip at either angle of the mouth. Thus with the blood supply of the upper lip controlled, the skin incision is continued beneath the nose to the midline, and completely through the upper lip. The cheek and the lip must be reflected toward the ear on the affected side and the connection between the cheek and the alveolar process completely separated with a knife. With bone forceps the incision through the malar bone as described above is completed. The nasal cartilage is separated from the nasal process of the maxillary bone. A temporary tampon of gauze is placed in the pharynx. This we found sufficient to prevent the aspiration of blood. If necessary extract the central incisor tooth. Large bone forceps, as suggested by Price[13], are inserted immediately in the midline and the alveolus and hard palate completely divided with one movement. With a knife the soft palate is separated from the hard palate on the affected side. Next, grasp the alveolar process and the face of the bone with lion-jaw forceps, and the remaining attachment of the superior maxillary bone to the palatal bone, ethmoid, and pterygoid processes are fractured, and the bone is completely removed. It may be necessary to take a stitch with fine silk in the mucous membrane between the hard and soft palate. A temporary tampon of gauze is packed into the defect to be removed through the mouth. The mucous membrane on the posterior surface of the upper lip is closed by interrupted silk sutures. The skin incision is closed with catgut after the ligation of the cut arteries. A light gauze dressing is applied to the face with strips of adhesive plaster. The patient is returned to bed and the head is kept elevated.

Beginning with the first day after the operation the mouth is irrigated with a weak Dobell solution and the gauze packing is removed on the second day and does not need to be replaced. The dressing may be removed from the cutaneous incision on the fourth or fifth day.

The absence of any shock with this operation, contrary to what has been experienced by others, was very noticeable.

The diet is liquid during the first week after the operation and the patient's mouth is thoroughly cleansed after each feeding. These cases are able to eat solid food at the end of the week.

The advantages of this operation are that the blood supply is readily controlled throughout the operation, so that we have practically a dry operative field. Tracheotomy and ligation of the carotids are unnecessary.

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DISCUSSION

Dr. Louis Frank, Louisville, Ky.—I think the difficulties or the ease of any operation depend very largely upon our familiarity therewith and the amount of work we have done in that particular line. I think, as a general proposition, that many surgical problems look very big maybe on account of inability to control blood supply. I am sure, however, that the operation which the essayist has described can by no means be classified among minor procedures. However, the various steps in an operation which is planned after the method which he has described (as I know from actual experience), offers, I think, the most rapid method of doing this operation, attended by possibly the least amount of hemorrhage and danger, and those factors which play the greatest part yield good results in this type of case.

In the operation which the essayist has described the hemorrhage is controlled and everything under our own control until just at the end of the operation, with the eversion of the jaw itself; and the bleeding then can be easily controlled by gauze packing. I think in this particular case there were no ligatures at all placed, all bleeding being controlled by the hot iron. It leaves the worst part until the end. It necessi-

tates no preliminary ligation of the carotids, laryngotomy or strangulation of the patient on account of the blood's escaping into the fauces.

My personal preference as to anesthesia is by means of the intra-tracheal method. We have for the past two or three years used in this character of work the intra-tracheal method, by use of an apparatus modified by Moeller, of the University of Pennsylvania, and find it very efficient and a most delightful way of administering anesthesia in this type of cases and in all other cases where such anesthesia is demanded. Of course, with intra-tracheal anesthesia the dangers from pneumonia are practically precluded and avoided, because there is nothing that can get into the trachea if we are careful in our cleansing and the fauces are thoroughly cleaned out before taking the patient into the operating room and introducing the tube.

One of the other dangers that can be eliminated is shock from hemorrhage. This is readily overcome by leaving the eversion of the bone until the end of the operation, and conserving all the blood possible for the patient during the early steps of the operation. I think death occurs in these cases chiefly from pneumonia and from hemorrhage.

The operation is by no means to be classified as a minor procedure, and much depends upon the operative technique not only of the operator but upon his help in these cases, for upon the assistant's skill depends the rapidity of the work and its completion along the lines planned. There is no occasion ever to change the plan of operation. There should be no hesitancy after the operation is once started to carry it very rapidly to its completion. Here, as in many other procedures, I think that the ideas that we have must be practiced from the standpoint of not only mortality, but everything else; because these things depend upon the skill and experience of the operators, and skill in the particular kind of work which is expected to be carried out.

Just as in a great many other types of work, we have had mortality rates which are very high, and we find with greater experience in the particular line of work that the mortality is reduced, and just so with resection of the upper jaw, with attention to hemorrhage and to anesthesia particularly, the mortality can be, and will be, reduced.

Dr. Lucian Landry, New Orleans, La.—Just a word about the anesthesia. The doctor said that he regarded chloroform as the best anesthesia; but we think in this particular field that the injection of the gasserion ganglion is very good, by the Hurtle route, with ½ % novocain. This lends itself very well to this particular field.

We have had six or eight cases in the past two or three years in which the tri-geminal injection by novocain has given us very good results, and I think it should be considered.

Dr. J. Shelton Horsley, Richmond, Va.—The paper of Dr. Price is an excellent presentation of the subject. I have recently been using the rectal anesthesia of Gwathney for operation about the mouth and neck, except in infants, where rectal anesthesia is impractical. In the latest technic paraldehyd is given in the preliminary rectal injection, as much less ether is used. We have had very little trouble with it and the advantages are obvious.

In regard to ligation of the external carotid, I am rather inclined to ligate in an excision of the upper jaw. Unless the patient is very stout or short necked, it can be done quickly. If the external carotid is ligated, put a ligature also on each of the large branches in the neck. This blocks off the blood supply much better and accomplishes about the same thing as excising the external carotid. It has the effect of partly starving the growth. If you can cut off some blood supply you not only have less blood lost during the operation, but a somewhat diminished tendency to recurrence.

Dr. Price (closing).—I appreciate the discussion of the paper. In regard to the injection of the gasserian ganglion, I can readily understand how it would control the anesthesia during the operation. That is, the patient need not, necessarily, suffer pain; but I believe it would be more desirable for me to have the patient under a general anesthesia for the operation. I think the naso-pharyngeal tubage method with ether would be my choice in case you could use the nasal-pharyngeal tube. If there is from the mouth and nose a foul discharge, I think there is an objection to this method, and in that case I think the chloroform may be given by the open method with less inconvenience to the operator, and with as little danger to the patient, in the hands of a skilled anestheist, as in any other way. The ligation of the external carotid, I think, is preferable to the ligation of the common carotid; but in doing this operation we found so little hemorrhage that I don't believe it necessary to ligate either carotid. As is known to Dr. Frank, who assisted with the operation (in the case shown) one branch of the facial artery was the only one that we ligated, because the cancerous material had evidently gone through the thin plate of the antrum, we controlled what little bleeding there was with the cautery, which we used freely. I think many cases of minor capillary bleeding can be controlled with the cautery, and there is no objection to its use.

EXTRAPERITONEAL CAESAREAN SECTION*

By W. Kohlmann, M.D.,
New Orleans, La.

The high transperitoneal Caesarean operation has given in recent years more satisfactory results even in cases which by careful selection could not have been

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considered absolutely clean cases. Although the reported statistics show yet a rather high mortality of about 7 or 8 % in comparison with other abdominal operations, I believe that the mortality would be found a great deal lower if the cases reported in the last five years only would be considered, a fact due to the improvement of the technique and asepsis in abdominal operations all over the country.

My own experience in the last three years extends over 34 cases of classical transperitoneal section with one death. Of this number, 22 cases were reported at the Louisiana State Medical Society meeting, 1915, without death. It was my opinion that even this death could have been avoided. But the possibility of a failure in our asepsis is always present, even under the most careful supervision. The death occurred four weeks after the operation, due to a slow peritoneal infection. Eclampsia was the indication and acted possibly as a contributing factor.

Recent personal inquiries in clinics, which I visited during the last few weeks, gave me the same impression, namely, that the mortality of this operation has been lowered a good deal below 5 %, even as low as 1.7 %.*

Even if the transperitoneal route has given these good results, including cases which could not be considered clean beyond doubt, there is yet to be considered a class of cases which gives us a great deal of concern as the presenting conditions rather contraindicate the performance of a transperitoneal operation.

To this class belong cases which have been exposed to prolonged labor, frequently unquestionable asepsis, doubtful examinations in private homes without or even with gloves, cases in which the amniotic fluid has escaped for some time.

The low transperitoneal incision in its variations as recommended by Veit, Fromme and Hirst seems to be a more safe procedure, though the opening of the peritoneum in the hypogastric region even after suturing incurs yet the dangers of a peritoneal operation.

In regard to the possibility of preventing a peritoneal infection, the extraperitoneal operation recommended so highly by Kustner and others would be an ideal procedure. But the fact that the performance seemed to be connected with great difficulties, the large wound easily exposed to long-lasting infection and suppuration and the possibility of injury to the bladder made me rather hesitate.

My personal experience up to date is rather limited. I have performed only six sections of that kind, five of which number were extraperitoneal, one transperitoneal (clamps),—a very small number compared with reports from German clinics.

CASES

Case 1.—Mrs. A. W., Mexican, aged 32 years. Two para. General condition good. First delivery normal, — very small child. Measurements fairly normal except anterio-posterior, which is 17.5 cm. In labor 36 hours. No progress in last 12 hours though contractions are good. Head not engaged. Bag ruptured in beginning of labor. Fetal heart sounds getting weaker. Extraperitoneal Caesarean section delivered a living child. Patient left hospital in 12 days.

Case 2.—Mrs. C. P., aged 30 years. Primipara. Midwife case. Membranes ruptured 24 hours before delivery. Measurements below normal. No progress after 12 hours of labor. Temperature 101°. Cervix thinned out; three fingers dilatation. Extraperitoneal section. Child living. Patient left hospital three weeks after delivery. Delay due to abscess of breast.

Case 3.—Mrs. E. T., 27 years of age. In consultation. Primipara. Pelvic measurements 2 cm. below normal. Membranes ruptured early in labor. Head did not engage after labor of 24 hours. Cervix three fingers dilatation. Extraperitoneal section delivered a living child. Patient made a normal recovery and left on the twelfth day.

Case 4.—Mrs. C. B., 24 years of age. Primipara. Measurements one centimeter below normal. Anterio-posterior diameter two cm. short. Cervix four fingers dilatation. During operation peritoneum was opened. Opening was clamped. Recovery of mother normal. A living child was the result.

Case 5.—Edna B., colored, aged 20 years. Geisnar, La. Primipara. Traveled two hours in plantation cart and three hours on railway. On account of face presentation several attempts at version and two unsuccessful applications of forceps were made. Examination shows face jammed down and chin pointing posteriorly to the right. Extraperitoneal section. Living child. Patient left hospital in ten days.

Case 6.—Mrs. B. T., 38 years, delicate, feeble woman. Measurements 1.5 cm. smaller than normal. Pain strong, but head did not engage after 24 hours. Case clean, but delivered by extraperitoneal operation. Child living. Recovery in

*Verbal report from Dr. Pollak in a series of about 148 cases.

regard to abdomen was an easy one, but the case was complicated by pneumonia.

Up 'till a few years ago this operation was not performed at all in this country. Hirst, of Philadelphia, was the first one to report six cases,—*Bulletin of the Lying-In Hospital of New York,* 1914. Some cases were reported by Gellhorn, of St. Louis,—*Journal of the American Medical Association.* In recent years the low incision has met with more favor, though more in the style of the low transperitoneal route as suggested by Veit, Fromme and Hirst, on account of the surgically simpler technique.

Notwithstanding the fact that the absolute extraperitoneal route is more difficult and requires more time, a fact which is of great importance especially in cases exposed to long and protracted labor, this procedure seems to offer some rather important advantages.

1. If it is possible to perform the operation without opening the peritoneum the safety of our patients will be greatly insured.

2. The bleeding from the thinned-out cervical walls is greatly diminished.

3. The operation will not be complicated by intraperitoneal adhesions.

The small amount of blood lost in these cases induced me to employ this method recently in an absolutely clean case. The patient (Case No. 6) was a very feeble, anemic subject, apparently not able to stand a great loss of blood. Some of the German operators, especially Kustner, recommended the operation for more or less all cases, with the exception of placenta praevia.

On account of my rather limited experience with this method, I am not prepared to say that I would follow this teaching unconditionally.

The first suggestion to open the uterus by the extraperitoneal route was made in the early part of the nineteenth century by Yorg, in 1806. Following this plan, Ritgen operated upon a case in 1820.

Physik, in 1824, advised a transverse incision and loosening the peritoneum over the cervix and pushing back the bladder. These early attempts lost the practical interest as the transperitoneal incision was followed by excellent results due to the improved suture of the uterus, recommended at about the same time (1880) by Kehrer and Saenger.

In 1906, Frank, and simultaneously Sellheim, revived the interest in the extraperitoneal operation. The technical difficulties especially, as the peritoneum in this region is very thin and at times difficult to recognize, induced Sellheim soon again to substitute the low transperitoneal incision for the strictly extraperitoneal procedure. To avoid soiling of the peritoneum, he recommended suture of the parietal peritoneum to the peritoneum covering the cervix. Hirst recommended a similar technique. Veit and Fromme clamp the peritoneum and suture after extraction of the child, fearing that the sutured parts may give during the extraction. To avoid this accident, Hirst advises placing a retractor in the upper angle of the uterine wound.

The method to open the cervical part of the uterus without the slightest injury of the peritoneum was perfected mainly by Doederlein, Bumm, Latzko and Kustner. The most important improvement was the fact that these operators did not try to reach the cervix in the median line over the bladder, but on the side of the bladder, as the peritoneum is easier detachable in that region.

Doederlein advises an incision parallel to the left Poupart's ligament, Latzko a median incision; Kustner employs an incision 4 to 5 cm. to the left of the linea alba and parallel to it.

In the treatment of my cases I followed mainly the technique of Latzko in the following manner:

A median incision is made beginning 1 or 2 cm. above the symphysis and extending upward toward the umbilicus about 12 cm. in length and ending about 6 cm. below the umbilicus. The muscles and prevesical tissue are now separated by blunt dissection by means of finger gauze pads and scissors. The outer margin of the bladder on the left side is reached. Blunt dissection separates now the bladder toward the median line until the uterine muscle is exposed. Care is necessary, as it is easy to mistake the bladder for the peritoneal fold. When this point is reached and recognized it is easy to

push the bladder further toward the midline and the peritoneal fold upward.

It is advisable to fill the bladder to a moderate degree,—as with about 200 c. c. of boric acid solution. When the outer margin is located, it is advisable to empty the bladder, as the filled organ rather obstructs the field of operation. A retractor now holds the bladder toward the right and exposes the cervix for the incision. A finger is introduced immediately into the mouth of the child to rotate the head and a short forceps delivers the child. Now follows the manual removal of the placenta through the wound, though some operators advise the natural route for removal of the placenta. The suture of the cervix, preferably a continuous suture, is quickly done. The bladder is replaced and the muscles and skin are united in the usual way. A small drain, which is removed in from one to three days, depending on the amount of drainage, is advisable, but is not absolutely essential.

Note:—Since presenting the above paper I have performed two more operations of this kind with very satisfactory results; both children living, and both mothers making uneventful recoveries.

DISCUSSION

Dr. W. D. Haggard, Nashville, Tenn.—I have had no occasion to employ the extra-peritoneal method. I had gotten the impression that it was very difficult to do. The eight or ten cases of Caesarean section which I have done have been clean cases and there has been no mortality. In cases where futile attempts have been repeatedly made by forceps and where a patient was infected this method can be easily used from what I gather from the essayist. They are the very cases that are so notoriously dangerous for intraperitoneal Caesarean section. The child is thus given the opportunity for life, and, of course, the mother is given her best chance also. It is well known if we do the ordinary transperitoneal operation in the infected cases the mortality is extremely high.

It seems to me that this type of approach would enable one to extend the benefits of Caesarean section to the infected and the frequently manipulated and potentially infected cases, and if so it, therefore, ought to be of great value.

Dr. Kohlmann (closing).—It seems to me, gentlemen, that this procedure, though difficult, is a very important one, and I believe will have a future. It took some time and long consideration for me to make up my mind to do the operation. But, as you see in my record, after employing it I felt that the procedure was not so difficult as I had feared. One fact especially struck me as an advantage; there is less bleeding than in the high transperitoneal incision on account of the cervix's being greatly thinned out.

I want to draw your attention to one point which I did not emphasize sufficiently, and which in one case made me change to a low transperitoneal incision. To locate the bladder it is advisable to fill the bladder with 2 % boracic acid solution—about 150 c. c. But as soon as the bladder is located it is necessary to evacute the fluid, as the distended bladder obstructs the field of operation.

A NEW DEVICE FOR RE-ESTABLISHING AND MAINTAINING SUSPENDED RESPIRATION*

By J. Harris Pierpont, M.D.,
Pensacola, Fla.

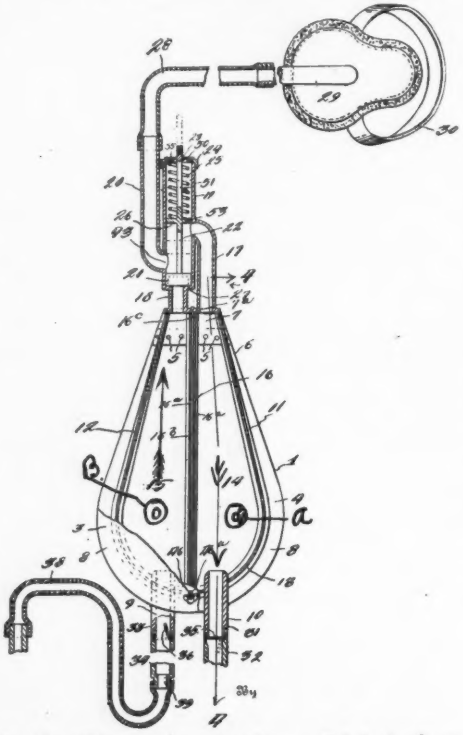
Being deeply interested in the subject of artificial respiration as applied to resuscitating those who have ceased to breathe from unnatural causes, my experiments in this field of endeavor covering a period of two years have resulted in the construction of a device for re-establishing and maintaining suspended respiration. It affords me great pleasure to present this device to you upon this occasion.

The cardial points to bear in mind in all attempts to re-establish respiration are in their order of importance: (1) the immediate action on the part of the operator; (2) the use of an appliance which will most nearly correspond to the normal function of the lungs; and (3) being sure that respiration has not ceased for a period of more than twelve to fifteen minutes.

When a person ceases to breathe spontaneously, there is no time in which to send to a distant station for a device to be used in resuscitation. Action must be *immediate* and properly applied, for it is a well-established fact that a few seconds only may prove to be the determining factor in saving a human life. The physician needs an apparatus which is always at hand, can be easily and quickly applied, and operates perfectly in simulating natural respiratory efforts. The device should

*Read in Section on Surgery, Southern Medical Association, Tenth Annual Meeting, Atlanta, Ga., Nov. 13-16, 1916.

combine lightness of weight, compactness of structure, and be within the financial reach of the general practitioner. These requirements, together with others of a lesser degree of importance, will be found

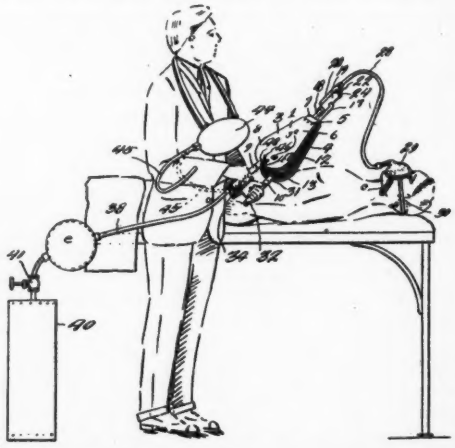


in the Pierpont pulmotor, which is here briefly described.

It consists of a double-acting hand bellows having a capacity in each compartment of the average amount of tidal air, a spring-valve in the head of the bellows which directs the current of air to and from the lungs, the air, or super-oxygenated air, being fed through the handle of the bellows at 9.

When the chamber is full the bellows is closed, using two seconds of time with an adult subject and less time for infants and children. The current of air is thus driven against the base of the valve 21 in the head of the bellows which, when thus actuated, is lifted above the port 43 and passes into the supply tube 28, leading to a face mask 29. The face mask has been previously applied after drawing out the patient's tongue by means of a self-retaining forceps (Pierpont), and closing the mouth upon the protruding tongue. The mask is held in position by an elastic band or steel spring so that air can not escape from the mouth.

The air enters the lungs through the nose, larynx, trachea and bronchial tubes. As soon as the bellows is closed, the pressure on the valve 21 ceases and the counter-spring 25 throws it back into position, thus opening the ports 43 and 22; and the vacuum produced in opening the bellows draws the exhausted air from the lungs, which upon the next compression is forced out through the handle, 10. At the time the bellows is being opened the vacuum produced draws a new charge of air into 15, and the exhausted air from the lungs. The valve indicated by "A", and fixed in the wall of compartment 14 by being half turned, opens several small ports so that the patient can breathe through the instrument without the necessity of removing the face mask, when it is thought natural respiration has been established. Another method of action is thus also provided, as chamber 14 is cut out and the air after being forced into the lungs can be expelled by manual pressure exerted upon the chest and abdomen, if this method is



preferred. The instrument can also be used for so-called mouth to mouth breathing by not operating the bellows at all, but by blowing through the handle 9 and using manual expression of the air from the patient's lungs.

The valve at B in 15 is a safety pressure device for automatically holding the lung pressure at and below 15 cm. water gauge.

Any percentage of oxygenated air can be used, but in my opinion normal air is all-sufficient if used soon enough.

The slightly curved rod attached to handle 9 and running through handle 10, not shown in diagram, serves the purpose of keeping the apparatus closed; and a more important one,— that of regulating the amount of air used for patients of different ages, from the new-born to the adult.

Your attention is called to an article written by Professor Yandell Henderson, of the Yale University School of Medicine, which is most illuminating upon this subject, and which will be found in the July 1st. number of the *Journal American Medical Association.*

A MORE RADICAL VS. CONSERVATIVE OPERATION UPON THE PELVIC ORGANS*

By C. N. Cowden, M.D., F.A.C.S.,
Nashville, Tenn.

It is an every-day occurrence as we scan the pages of medical literature to see some gynecologist report a large series of cases upon which he has so skillfully and successfully operated. After reading his reports, we are usually impressed with the fact that he is entirely satisfied with the results of his work. Especially is this true of the men who are beginning their surgical career and have not had time to observe the *end* results of their work. All of his patients made a good primary recovery; for the mortality rate after work of this kind should be practically nil.

The question arises: Are the patients and family physicians as well satisfied as he is with his brilliant work? We must remember the fact that the patient has one specific thing that brings her to the operating table, and what gratification or satisfaction is this to her that she has had a classical operation done upon some of her internal organs only to discover that she has the same pain that has made her an invalid or a semi-cripple for many years? How many of these patients who have been "successfully" operated upon pass on to the family physician, the neurologist or perhaps to another surgeon, who makes the discovery that she has been operated upon for the wrong thing, and what she needs is *more* surgery?

I do not intend to bring before you any statistics or make a detailed report of my failures, but I want every one present to go back over his own work and see if it has, at all times, been satisfactory to all parties. It is a good rule to study one's unsuccessful cases in order that we may guard against the possibilities of future error. Until within the most recent years, and it is familiar to many who are present, surgery of the pelvic organs was only directed to saving of the patient's life, with the one exception, the idea promulgated by Battey.

Battey, one of the eminently distinguished sons of Georgia, whose name was heralded around the world, was one of the many thousands of practitioners who encountered in their every-day work a variety of diseased conditions of the pelvic organs in women that proved rebellious to all remedial agents or methods of cure. And when they came in contact with one of these semi-invalids, it was the custom then to encourage them to bear their suffering as best they could, and to look forward hopefully to the menopause, when the natural change of life might be expected to remove the cause of their suffering and restore them to health. In many cases death relieved them before the change, or in others serious structural lesions developed that rendered nature's cure impossible. But not infrequently they did secure relief after the climacteric and their health would become permanently restored. This fact was noted by Battey and he reasoned with himself if the change of life is the only hopeful remedy to be relied upon, why not produce it by the hand of the surgeon? Thus in Rome, Ga., Battey wrote the first chapter in the literature upon this subject that was in a short time destined to engage the attention of the leading men of the world. Like every innovation, it

*Read in Section on Surgery, Southern Medical Association, Tenth Annual Meeting, Atlanta, Ga., Nov. 13-16, 1916.

was seized upon by the incompetents and used in thousands of instances when the operation was not at all indicated; and of course it soon fell into well-deserved disrepute. But Battey was right in a great many of his conclusions, and there is none who can gainsay it today.

From the many disastrous results from the radical operation advocated by Battey came the closer study of the question, and the pendulum has swung to and fro in the last two decades in regard to many of the problems of adnexial pathology and pelvic surgery. About twelve or fifteen years ago leading gynecologists (disappointed in the results of their radical cases) conceived the idea of substituting conservative operations upon the pelvic organs to take the place of the radical work that had been in vogue for many years. The object was not to reduce the mortality rate, because it was nil, but to reduce the morbidity after operation upon these organs. Thus, under the skillful hand of Dudley in this country, and Pozzi of the old world, conservative methods soon held sway. The reason which they advanced in favor of this conservatism was, first, to preserve the function of the ovary in the animal economy in order that ovulation and probable pregnancy might take place, which is the crowning event in a woman's life; and second, to avoid the artificially produced and premature menopause with all of its nervous and vasomotor disturbances.

Every one present realizes what a calamity it is for a woman to have total extirpation of her internal genital organs. Yet under certain conditions we do not hesitate for a moment to do it and get the most satisfactory results. On the other hand, all of us have had almost as disappointing results from many of our cases of our artistically performed conservative operations by failure to relieve the symptoms and have the patients to go from bad to worse or come back from time to time for more surgery. Some of our cases of conservative work are not only not relieved by the operation, but soon thereafter develop the menopause with all of its unpleasant phenomena. Some operators claim wonderful results in most of their cases; others get disappointing results many times.

It is not a question, gentlemen, of refinement of technique at all, for I believe the average gynecologist, who operates only occasionally, is capable of doing either radical or conservative work in an approved way. I would not have you think that I am an advocate of radical surgery in every case that comes to us for treatment; far from it. What we want is a clear insight into diagnosis and a better judgment based upon experience as to the proper course to pursue when we have the different parts in our hand in the operating room. We all are agreed that malignant growths, primary tuberculous infections, double tubo-ovarian abscess, bilateral dermoid cyst and hypoplastic uteri with hard cirrhotic ovaries near the menopause, are all cases demanding ultra-radical surgery. To this group of cases I believe should be added the long-standing cases of chronic inflammation of the uterus that has resulted in an enlarged, soft, hyperplastic, vascular condition, due to long-standing infection that is attended with pain, leucorrhea and hemorrhage that has resisted all treatment. It should be subjected to radical surgery more than is now the present custom and practice.

Again, I believe that in the cases that demand complete removal of tubes and ovaries, it is bad practice to leave the uterus behind, for it then becomes a useless organ, and in many cases the degenerative changes that it undergoes often demand more surgery later on. Unless the condition of the patient contraindicates any added shock, I would advise supravaginal removal of the fundus along with the tubes and ovaries. The pathology of the pelvis both present and future is removed, and the pelvic diaphragm in the majority of cases is left more satisfactory.

The desirability of applying conservative surgery to the Fallopian tubes after pus formation is a question that has come up for settlement with us all. We all have had such cases get well and become pregnant afterward. But those cases are the rare exceptions, and experience with secondary operations for infected stumps is, I daresay, a very frequent occurrence with us all. Where I have my choice my practice is in favor of total and complete

ablation of pus tubes down to the horn of the uterus.

Real conservative operations upon the tubes I would limit to a very narrow field, — those of tubal pregnancy in the outer half, where there has been no great destruction of the tissues and to non-gonorrheal inflammations with delicate occlusions of the frimbriae at the extremities. Also in some cases of pelvic peritonitis with adhesions that produce a hydro-salpynx or kinking of the tubes, a resection is here sometimes admissible. But even in those cases, salpingoscopy does not remove all the difficulties, for many times the uterine portion of the tube is occluded and does not open after incision and drainage from the other end. We may stir up more inflammation and get more occlusion than we had at first by the procedure. As a local focus of infection with systemic manifestations, I think they are ofttimes overlooked, although they do not give much evidence of their presence. If we are convinced it is permanently occluded, there is no reason why it should not be removed; for its only function, that of carrying the ovum from the ovary to the uterine cavity, is lost, and there can be no sentimental reason for leaving it. The infection is an ascending one from the cavity of the uterus, and if we leave a section of the tube behind, we fail to remove all the pathology and a recurrence is almost the invariable rule. I believe every one present will agree with me that conservative surgery of the tubes is rarely indicated.

We now come to the real battleground of the question—the ovary—and we have to view it from many angles and study it in regard to the influence it has upon the body metabolism and general welfare of the patient. The first question we wish to ask is, does the remote result of conservative surgery on the diseased ovary warrant us in resecting such an organ? Or has it been our experience that such is the case? I am speaking now of the diseased ovaries that have been wholly or partially destroyed by primary pathology or secondary infections from the uterus and tubes. Two facts we must keep before our minds when we come to settle this question at the operating table. First, total extirpation of the ovaries is ofttimes attended with many unpleasant psychical effects together with much vasomotor disturbance and physical changes that are nothing short of a bodily disaster. And secondly, on the other hand preservation of these functions renders a symptomatic cure impossible and secondary operation frequent.

Conservative surgery on the ovary means preservation of the function of the ovary and the avoidance of the premature menopause with all its attendant evils; and this means a great deal to the individual patient in reaching a decision as to the extent of the operation to be done, or the degree of conservatism to be adopted, we must consider individual conditions and environment. In a young woman with no children or before the full development of the generative organs, I carry my conservatism far beyond those of older women. If the patient says, above all things I want the menstrual function and the chance of conception retained, then we should do all we can to preserve for her this function in so far that it does not endanger the life of the patient. They may have been chronic sufferers for years and beg you to remove everything to relieve them. But when it is done, even though it is done to remove malignancy, realizing later their unsexed and undeveloped condition, they invariably rue the day that they fell under the hand of the surgeon. The immediate results of conservatism upon these young patients are not so satisfactory to either surgeon or patient, but unrelieved symptoms and secondary operations are far preferable to the unhappy state of mind of these early oophorized patients. Here I believe any kind of conservative surgery is preferable to radical work.

Fortunately these cases are rare, and seldom the surgeon is compelled to do radical work upon them.

There is, though, an age limit in conservatism, and there must also be considered the circumstances and condition of the individual patient. In a woman of the laboring class, when circumstances demand a quick return to her duties, and when these duties are laborious, I would be inclined to more radical surgery than in a woman whose pecuniary condition

relieves her of the necessity of personal effort.

Though we are all agreed that the earlier in life the loss of the ovary occurs, the greater the changes that take place, clinical experience has shown that the severity of the nervous phenomena differs in different individuals. We have all noted the fact also that when we have done a complete ablation for a long-standing suppurative condition in the pelvis that it is much less severe than when done for fibromata where the ovary is seemingly healthy. It seems that long-standing interference with the normal function of the ovary subjects the system to a gradual withdrawal of this subtle influence; and by the time we are forced to do radical work very little post-operative discomfort is experienced by the patient. So in these long-standing cases with marked structural changes in any or all organs, radical surgery will give us the most satisfactory results. This, to my mind, teaches us that an ovary conserved for its secretion, if that ovary is unhealthy, will leave the patient in worse condition physically, mentally and more nervous than if total extirpation had been made.

The ovary has no hard or fast standard by which we can say that it is or is not normal. The amount of connective tissue in them, the size and the shape of the organ, are all so variable that they prove in cases, on the boundary line, to be very confusing. Does the so-called cirrhotic ovary give us all the symptoms that we find in these cases? Or does the enlarged cystic ovary that we find in long-standing cases of backward displacement of the uterus furnish enough pathology to account for the symptoms complex?

If the future of the resected ovary could be assured to maintain its normal function, we would be justified in doing conservative surgery in all cases. But experience has shown us that resected ovaries or the ones that require considerable manipulation to free them from adhesions are, in the majority of cases, sources of pain, and are very prone to become cystic and degenerated. The same is true of ovaries that have been left when tubes and uterus have been removed, for in doing so the circulation is almost entirely destroyed in the ovary, and atrophy or other degenerative changes early supervene. Respecting fully the opinion of many authorities as to the importance of the ovary, I believe a large percentage of these that in the past we have been leaving intact would be far better removed.

The diseased ovary must have its function impaired to a greater or less extent, and if the condition is very severe and of long-standing the symptoms of the menopause are already going on during the course of the disease, and the patient is already being prepared for the change.

In summing up our deductions, we must remember the fact that following conservative operation upon the ovaries the only thing that we can positively promise our patient is that her periods will continue. All cases of resected ovaries present the possibility of recurrence and disappointing results in obtaining permanent symptomatic cures. Again pregnancy does not occur so often as we are led to expect, less than 5 % in the reported cases from the different operations.

I can not lay too much stress upon the importance of reaching some conclusions in regard to this matter, for it is in regard to the guarantee against failure to relieve symptoms and secondary laparotomies that radical surgery has a distinct advantage over conservative work.

If by ourselves, investigation based upon careful observation of our own work, should show that the morbidity after conservative pelvic surgery is so great as to require an unwarranted number of secondary operations, then we should adopt the radical and reject the conservative work in a large number of our cases. If we would do this, I think that the family physician, listening to post-operative tales of distress, and of failure to get relief of symptoms, would grow more and more pessimistic in regard to our successful operations. I do not advocate radical surgery in all of our cases, but a relatively more radical surgery.

DISCUSSION

Dr. Floyd McRae, Atlanta, Ga.—I think the title of Dr. Cowden's paper is most unfortunate. It isn't what he said, but the title of his paper that is misleading.

If there is any one thing that has been proven

in pelvic surgery, it is that we have been doing too radical surgery in young women. There is no question of that. I was brought up in the hotbed of ovarian removal. I don't think there was any other place, unless it was, perhaps, Birmingham, England, whose women suffered as did the women here. I think it is terrible, the suffering that followed the too radical surgery of the generative organs of young women. I have followed up many of these cases, as all my early work was radical surgery, and a large percentage of these women were infinitely worse off than if they had never seen a surgeon. A great many of those operations were ill-advised, I grant you that. But the importance of conserving to a woman the things that make her a woman are not to be lightly dealt with.

I have kept accurate statistics, both of my radical and conservative work, and I have gone over my whole work twice in the last eighteen months, once in writing a paper for the Southern Surgical and Gynecological Association meeting, and another paper for the Georgia State Medical Association meeting in Columbus, Ga., this year, and the results that I have gotten have been infinitely more satisfactory where I have done conservative surgery in cases where conservatism was possible.

I don't mean to say that Dr. Cowden has not done the same thing at all. Dr. Cowden and I would probably handle a case very much alike. It is the title of the paper I am objecting to.

I looked up not only the general state of those cases afterward, but the number of pregnancies that have followed, and they are much larger than those quoted in statistics. I really conserve. I remove diseased portions and conserve. I handle the tissues delicately and I save.

I do not believe the conservation of pus tubes, or even of taking them out to the cornu of the uterus is advisable. I take out the cornu, because where it is left quite frequently abscesses develop. I do not take out an ovary if it has a cyst on it as big as my fist, and I do save to that woman what makes her a woman and capable of becoming a mother, and certainly that which makes her a happy wife.

Dr. W. C. Gewin, Birmingham, Ala.—This is a very important subject and one that merits our most serious consideration. On the one side we have the responsibility of leaving diseased tissue in the abdomen, and on the other the responsibility of a train of nervous symptoms occasioned by the indiscriminate removal of organs that are capable of regeneration.

The doctor has handled his subject in a masterful way. Still no amount of printer's ink nor didactic lectures can guide us in the management of these cases. It is a question of an accurate knowledge of the pathology and of mature judgment.

Recently, I heard a prominent nervous and mental specialist make a statement in which he said: "A law should be passed compelling a surgeon who has removed both ovaries to treat the patient the rest of her life."

The possibility of the transplantation of ovarian tissue should not be forgotten. We know that in some cases it is impossible to save any tissue whatever, and successful cases of transplantation have been reported.

Dr. F. Webb Griffith, Asheville, N. C.—About ten years ago I had occasion to look up the cases of post-operative neurosis following operations in the gynecological service of Johns Hopkins Hospital. Two things especially impressed me: first, that post-operative neurosis might develop after any operation, however slight; secondly, that the most frequent cause was the removal of the ovaries. As we know the uterus has but two functions—to menstruate and to bear children—and therefore its removal does not vitally effect the general health of the patient. But the internal secretions of the ovaries are so vital that if we have even a ghost of a chance to save the ovaries, we ought to do so even at the risk of a second operation. I think we should try to do conservative surgery even if all we can promise is that the woman will menstruate. But we can promise more than that—that she will not only menstruate, but also that she will feel that she is still a woman, although she knows that she can not have children. The doctor has given us an excellent paper, although I believe some of us would lean a little stronger toward conservatism.

Dr. Wm. T. Black, Memphis, Tenn.—As I understand Dr. Cowden's paper, it is entirely different from what one might have thought. I believe he would operate about as would any other experienced surgeon. I believe his conservatism is based more upon greater reasoning faculties and experience than when he first commenced surgical practice. We thought we were conservative when we first began to do gynecological work, but we save a great many organs now that were sacrificed in our earlier work. He is certainly correct in the statement when he says when you try to save diseased organs frequently these cases will come back for secondary operations. We probably call ourselves more radical than we were a few years ago, but it is really conservatism.

I think if there is a rather normal uterus without adhesions surrounding it, if the uterus has not been retroverted, retroflexed or bound down by adhesions, etc., it is better to leave it in. If there is a soft, boggy uterus, adhesions or a metritis, perhaps it is better to take it out.

A certain class of tubes should be removed, but there are cases of salpingitis, viz., acute specific salpingitis, which should be left alone; or where you have a case where you remove one tube and resect another in an effort to allow a young woman the chance of becoming a mother. I have had pregnancy to take place after tubal resection, but I do not approve of that as a general rule.

When an ovary is resected, about 5 % of them recur and necessitate a second operation. I have known them to become cystic in three months and have had to operate upon them again.

But in the young woman it is a very serious thing to remove both ovaries; and, where possible, some ovarian tissue should be left.

Dr. Joseph A. Danna, New Orleans, La.—I agree with the essayist in every contention that he has made except that I do not believe any woman's ovaries should be removed totally unless it be in an attempt to save her life. My experience has been that those cases where both ovaries have been removed are the ones who come back to the surgeon for something more to be done for them much more often than those in which conservative work has been done.

I am, if anything, ultra conservative, so I differ from the doctor in that respect.

Can any one tell me the symptomatology of a cystic ovary?

Dr. M. F. Bledsoe, Port Arthur, Tex.—There are times when it is not necessary nor is it good surgery to resect the tubes down into the uterus.

Where the acute infection has subsided the base of the tube may be thickened and yet the lumen patent conservative surgery may be indicated. I just now recall a case that is a good example: A young woman, twenty-three or twenty-four years of age, sub-acute gonorrheal pus tubes, acute exacerbation, temperature 104. I removed both tubes and resected the stump and both ovaries, mopped out the stump of the tubes with tincture of iodin and ligated them with plain gut about one-half an inch from the uterus. The patient made a good recovery. This woman married some months later and is now about five months pregnant.

Where the acute vaginal and uterine infection is gonorrheal and has completely subsided, it is not necessary to do too radical surgery on young women. If you will resect the ovaries, evacuate the pus, mop them out with tincture of iodin and carefully stitch them up, remove the tubes, pass probe into the uterus to see about strictures of the tube, mop them out with tincture of iodin, and ligate with plain gut, you will accomplish all that is indicated or needed and still preserve for the woman her just inheritance—that of reproduction.

Dr. T. Brannon Hubbard, Montgomery, Ala.—I hesitate, with my short experience, to speak on such a subject, but as long as every one is giving experiences, I would like to give mine. My surgical training was in a New York hospital, where I think more radical surgery was done than most of you here would do. When I started out to practice for myself the impression I got was that men were doing too much radical surgery, and I tried to be as conservative as possible, but now I am turning, more or less, the other way. The women who are most troublesome are the women who have one tube removed and then come back for the other one to be removed, or have both tubes removed and come back for the uterus to be removed.

I think when we are going to operate on a woman with some pelvic trouble there is no reason for leaving unnecessary tubes or uterus when it is possible to remove them. They are already neuresthenic and we should make the operation complete so that we can tell them everything is fixed and they have nothing more to complain about.

Dr. Archibald Smith, Atlanta, Ga.—There is one point in this question that I do not believe any one has remarked upon thus far, and that is the question of the careful study and selection of these cases.

Of course, when Dr. Batty started out in the beginning he didn't know what to leave or what to take out, and we don't altogether know that yet, though the further we go and study them the more we can determine it. This is a point we can study among ourselves and try to disseminate the knowledge of which cases improve under conservative treatmcnt and which do not. We should leave the question, I think, of possible future operations largely to the patient, and some of them, if you tell them they might perhaps have to have another operation, will not blame you so much if they do.

If you don't take out quite enough you can go back and take out what is left, but you can not put them back if you take out too much at first, and get bad results.

The question of medical treatment in those cases with large, congested uteri, adhesions and more or less diseased tubes and ovaries comes in here. If you will give them a course of massage and a little high-frequency current in the uterus, they will improve a great deal. It will often make a boggy, flabby uterus feel quite firm in five minutes' time, and many will remain so if frequently treated.

As to the question of leaving the tubes. I once saw a patient in the Atlanta School of Medicine, on whom no less a surgeon than Dr. Davis had operated, and he said he felt quite sure he had done a bilateral sadpingectomy, and she became pregnant. This shows that the stump of the tube may functionate, and the more of the tube you can leave the better the chance of pregnancy.

Dr. Cowden (closing).—We all are agreed—but yet we are disagreed. Now, I do not believe a cystic ovary is necessarily a diseased ovary. It is a cystic organ, and you do not have, necessarily, any more normal ovarian tissue in a cystic ovary that weighs ten or fifteen pounds than you have in a normal ovary of the normal size. A cystic ovary not large enough to give trouble should not be subjected to radical operation. But the ovary that is a shell, subjected to long inflammatory processes, and covered by adhesions, that woman's system has been prepared for the change and the removal will not change that woman's condition at all, except in the majority of cases it will relieve the pelvic condition, and you will bring relief and cure as well.

Now the young woman who is not developed. Radical surgery is a mistake. I believe even the smallest portion of ovary that can be left in these cases is justified. But we are not agreed as to what constitutes a diseased ovary.

I thank you very much for the discussion, because it has been one of the greatest disappointments in my surgical work,—the settlement of the radical surgery of the pelvic organs.

ABSTRACTS—SURGERY

(See page 71)

RAILWAY AND INDUSTRIAL SURGERY

PLASTER TECHNIQUE IN FRACTURES*

BY R. W. KNOX, M.D.,
Houston, Tex.

Fractures are viewed from so many angles at the present time that a standardization of method would seem most appropriate. The difficulty, however, of reaching that stage of progress lies in the fact that fractures differ so much in degree and severity that individual cases demand individual treatment and any rule that might be advocated must necessarily be often honored in its breach rather than in its observance. We have found this to be true in railway surgery where the injuries are often of complex nature and rarely follow the rule.

In the usual run of fractures I have become convinced in recent years that our attention has been centered too much upon bone fixation by the use of foreign material directly to the bone itself and have not attached sufficient importance to the security to be found in a proper setting combined with external support. When by manipulation alone or by manipulation combined with open operation we can secure exact apposition in the original line of cleavage, the tendency to future displacement is usually a negligible quantity, and in such cases the addition of wires, screws and steel plates are of no advantage but rather a positive detriment. I would not be understood as advising an entire abolition of any or all of these agents, but simply maintain that their absolute need is very infrequent.

It can readily be seen that a well-fitting external splint is of greatest value in holding in perfect alignment and without it no internal splint would be of value. The most frequent difficulty in getting proper adjustment of broken bones lies in the fact that the break is not a smooth surface, but very irregular in outline; often with jagged edges and one fragment rotated out of its original axis. The X-ray gives little or no help in this matter of reduction and in some cases only an ocular inspection of the bone itself will enable us to correct the difficulty.

The object of this paper is to call attention to the advantage of plaster as a fixing agent in the great majority of fractures, both simple and compound. Its advantage can be summed up in the fact that the fit is better and that it answers all purposes for which a splint is intended. They are light and not bulky and therefore more comfortable to the patient; they do not require frequent adjustment; are cheap and easily applied and well adapted for fixation of joints near the seat of fracture. Tight bandaging is not necessary with plaster splints and therefore there is no danger from pressure sores or nerve involvement. The use of plaster to many surgeons means only solid casts and while this is necessary in some cases, the tendency at the present time is to use the splint where only the cast was formerly applied. The advantage over the cast is in lightness, better ventilation, easy adjustment, with lack of any possible constriction. Another item of interest in connection with plaster at the present time is its cheapness in comparison with the cost of its ready-made rival. For these and many other reasons it bids fair to run out of business the dealer in wood, metal, felt and other fracture accessories many of which fit only by accident. By its use the surgeon learns to do more of the actual work connected with his profession. This is certainly worth while in these times of high prices when everything connected with the surgical profession has reached the high-water mark. Such a knowledge would certainly be valuable in times of war if we should ever be so unfortunate.

Since interesting myself on this subject I have asked quite a number of my confreres, many of them excellent surgeons, if they use much plaster in their surgical work; and the invariable answer is "No." The main objection given is that they have not found it satisfactory. It was either

*Read before Southern States Association of Railway Surgeons, Auxiliary to Southern Medical Association, Atlanta, Ga., Nov. 13, 1916.

bad plaster or they had difficulty in handling it. I find the medical schools do not take this matter up in detail in their curricula and there are few graduates who are well-acquainted with plaster work even for simple fractures. In my experience, excellent results are obtained in most complicated forms of crushing injuries to the long bones, such as are frequently found in railroad work. Many of these cases must be treated as open wounds and plaster can be so designed to keep the comminuted bones in good alignment and immobile until nature closes the gap. In these cases drainage is an important factor. The first impression would be that satisfactory results would be impossible of attainment by the use of any form of plaster dressing. It is accomplished in a general way by connecting the plaster cast above and below the wound with a steel bracket which leaves room for cleansing and drainage. The plaster can be covered with shellac or some other substance impervious to moisture and that will prevent absorption of the discharges. This method is of especial advantage in severe injuries of the femur and tibia or such cases as we were once content to treat with the old-fashioned fracture box. This method is now known to be the breeder of much evil and many bad results. The bracketed splint preserves rigid alignment of the bones and maintains some extension; in fact, all that can be secured with safety in cases of extensive injury. One of its many advantages is that the patient can be lifted about without pain and the limb can be suspended as with the Hodgkins splint if deemed necessary. Immobilization is here certainly the most necessary desideratum and gives nature a chance for making the repair needed for the future usefulness of the limb. At best these cases are tedious and require treatment over a long period of time. When the injury is at any point between the ankle and knee, the leg can best be held in good alignment by two lateral brackets fastened below to a strong plaster shoe and above to a cast extending above the knee.

In some instances where the tibia has been badly splintered at the seat of fracture and there has been an unavoidable loss of bone, a long Lane plate materially assists in maintaining the required extension and proper bony relation. This plate, as a temporary expedient, does no damage to the healthy bone where good drainage is secured. It is removed when healthy granulation is established and healing of the wound is well under way. After this the external splint is all that is necessary to keep the leg in good position.

When solid bony union is delayed, as is frequently the case, I have found excellent results in hastening union with what we term the "Walking Splint," as it gives the patient the much needed exercise. In this respect it would seem to be greatly superior to the bone graft or other operative means. The splint is made after the style of the ordinary leg brace with plaster sides and steel supports fastened to the sole of the shoe. The splint can be made in any hospital and, while it is somewhat crude in appearance, the patient finds it quite comfortable. By fitting plaster splints accurately to the sides of the leg, from ankle to knee, the weight of the body is distributed between all points of the splint as well as the seat of fracture. Irritation thus set up facilitates firm bony union. Compound fractures of the femur are splinted in much the same way as the tibia by incorporating a large steel bracket into a pelvic spica and a leg cast from the knee to the foot.

If the fracture is high up near the trochanter and not compound the limb can be fixed in abduction with solid plaster cast reaching to the waist line involving the entire pelvis as well as a portion of the uninjured thigh. In this way both thighs are held in abduction and angulation at point of fracture is impossible. In a few cases it may be necessary to use the Lane splint in addition to the cast; if near the middle of the thigh and the muscles are not too badly damaged, an extension by weight and pulley is best used for a week before the bracketed splint is applied. In crushing injuries of the elbow joint the bracketed splint can be used in making any degree of angle desired between arm and forearm. This same splint can be used to advantage in simple fractures near the elbow joint, as it is probably more comfortable than any other that can be used. It has the advantage over any other form of splint in that the angle of flexion can be changed if desired. It is not necessary

to mention the various splint models that may be devised for simple fractures of the bones and joints, as these will suggest themselves to the case in hand.

In my experience the most expensive plaster has not proven to be the best. The kind that I have used for many years comes from Kansas and is purchased in Chicago by the barrel at a cost of 2 cents per pound delivered. The cloth in which the plaster is incorporated is known as potato starch crinoline and costs approximately 5 cents per yard in forty-two-inch widths.

The bandages which are kept in stock are rolled by hand and immediately wrapped in paper and kept packed on loose plaster in sealed tin boxes. Only cold water is used for immersing the bandages and with a good plaster only a few seconds are necessary for this part of the work. We have found that hot water with the addition of salt sets the plaster more quickly, but the final crystallization is not so firm. A slow setting plaster is of great advantage to the surgeon in that it gives him a much needed time to fashion his more complicated splints without the loss of material or annoyance of having to do the work over again. It was my former practice, in making splints, to apply the plaster splint directly to the skin after anointing the latter with vaseline; but I now find it much better to line the splint with cotton flannel and use no other padding. Vaseline can be used also and when these two precautions are adhered to no irritation of the skin is possible. It is an advantage when applying the plaster splint to allow some exposure to the air and to stiffen perceptibly before applying as in this way it has no disposition to wrinkle and presents a smooth surface to the skin.

This is the first of six papers on Fractures read before the Railway Surgeons. The other five, together with discussions of all, will appear in future numbers.

AUTHORS' ABSTRACTS

Surgery, Gynecology, Obstetrics and Genito-Urinary Diseases

(Concluded from page 68)

A Further Report on Thromboplastin Solution as a Hemostatic. Alfred F. Hess, New York, N. Y., The Journal of the A. M. A., December 9, 1916, p. 1717.

Tissue juice made from brain (thromboplastin solution) has proved itself of practical value in controlling hemorrhage wherever it can reach the site of bleeding. In cases of true hemophilia it may be regarded almost as a specific hemostatic. It is to be recommended for local use in the bleeding of the new-born, in nasal hemorrhage, and in the parenchymatous bleeding associated with various operations, etc. Where local applications fail, it should be injected into the site of hemorrhage, as in bleeding from gums following tooth extraction. This method can readily be resorted to, as thromboplastin solution loses but little of its potency as the result of dilution and cursory boiling.

Further clinical experience is necessary before its value can be determined as a hemostatic in connection with hemorrhage of the gastro-intestinal tract. However, it is innocuous when given by mouth in considerable dosage, and would seem to be indicated in bleeding from the stomach and from the upper intestine.

In addition to its hemostatic action, this tissue extract has been found to possess healing properties, actively stimulating granulation tissue and hastening epithelization. It is therefore applicable as a dressing for torpid ulcers and for sluggish wounds.

Sacro-Iliac Strains and Luxations. John G. Hayden, Kansas City, Mo., The Journal of the Missouri State Medical Association, November, 1916, p. 531.

Sciatica and lumbago are diagnoses to be avoided unless one can rule out other causes of trouble for pain in the small of the back and down thigh. Backaches are frequently associated with pelvic diseases in the female and many women are operated upon for the removal of the uterus and adnexa who only have a postural defect. Besides traumatism as a cause of sacro-iliac strain and luxation these conditions are often associated with flat foot, flat back, sacralized 5th lumbar vertebra, and enteroptosis.

It is imperative that the patient should be correctly aligned if we are to expect good results in these cases.

Many cases of sacro-iliac strain and partial luxation adjust themselves spontaneously by hyperextension of the back. Others require only adhesive support and some cases require fixation in plaster-of-Paris or in some of the chronic cases a sacral pad applied to the corset gives adequate support.

Pregnancy and menstrual periods predispose to sacro-iliac strain, as at these periods there is a physiological relaxation of the joint. In this connection a case is reported in which pregnancy was interrupted for sacro-iliac sprain.

A second case of rotated ilium seems to have been cured by pregnancy in as much as there have been no symptoms since parturition. At the time of writing the article there is no displacement of the sacro-iliac joint, but a sacralized transverse process of the 5th lumbar is seen on the side opposite.

EYE, EAR, NOSE AND THROAT

THROMBOSIS OF THE LATERAL SINUS, WITH REPORT OF A CASE OF SPONTANEOUS RUPTURE*

By Archibald Cary Lewis, M.D.,
Memphis, Tenn.

Sinus thrombosis presents such a variety of symptoms and runs such an irregular course that it is one of the most interesting studies in the field of otology. This multiplicity and irregularity may obscure the condition to such an extent as to render a definite diagnosis impossible before operation, or even before autopsy. While the infected thrombus is usually found in the sigmoid portion of the lateral sinus, it may involve the whole lateral sinus from end to end, including the jugular bulb and vein; also the superior and inferior petrosal, the cavernous and the longitudinal sinuses. Although the invading organism is usually the streptococcus, other pyogenic bacteria may cause the infection. Horn[1] has recently reported a case of pure streptothrix infection which terminated in double cavernous sinus thrombosis and death.

Other complications that conspire to change the clinical picture and defeat the diagnosis are extra-dural abscess, meningitis, cerebellar abscess and septicemia. In the absence of all these the diagnosis is not necessarily simple; for in uncomplicated lateral sinus thrombosis we often have no definite symptoms and the disease may progress to a dangerous stage before the physician suspects its presence. These cases are unrecognized because the septic thrombus has been walled off by aseptic blood-clot in Nature's effort to bring about spontaneous recovery. Friedenwald[2] reports several cases of this character and numerous other writers have reported cases in which complete obliteration of the sinus by collapse or organized blood-clot had been observed during operation or at autopsy. A number of cases are reported of sinus thrombosis running a non-febrile course in which obliteration of the sinus took place. The non-febrile course is variously explained by the aseptic character of the thrombus, by the mild nature of the infection, or by the discharge of pus formed through an opening in the outer wall.

The lateral sinus is most apt to be involved during an acute exacerbation of a chronic purulent otitis media. If during the course of an O. M. P. C., acute mastoiditis, or following the mastoid operation, the patient develops a rigor, we immediately think of sinus thrombosis and the importance of early operation. However, we are not justified in opening up the sinus until we have at least excluded malaria. The similarity of its temperature curve has caused this mistake a number of times. Far more serious is the mistake so often made by the general practitioner in diagnosing thrombosis as malaria and treating it as such until the patient is in a desperate or hopeless condition. Such were the circumstances attending the case I shall report a little later.

Thorough examination of the blood is of great value in all cases of suspected sinus thrombosis. Not only can we thus exclude malaria, but leucocytosis and high percentage of polyneuclears would indicate thrombosis. If the diagnosis is not clear and time permits, a blood culture should always be made to ascertain if a bacteremia exists. Oppenheimer[3] and others have found bacteremia to be a reliable sign of infective thrombosis provided other foci of infection are excluded. If a positive culture is obtained they open the sinus at once. So long as suspicious symptoms continue they advise daily cultures until a positive result is obtained or the patient's condition improves. If following the sinus operation streptococci are found in the blood after the first day, it indicates that the internal jugular vein is also involved in the thrombosis, and measures for its relief at once should be carried out. The X-ray, which is such a

*Read by title, Section on Eye, Ear, Nose and Throat, Southern Medical Association, Tenth Annual Meeting, Atlanta, Ga., Nov. 13-16, 1916.

valuable aid to diagnosis in mastoiditis, may be of use in clearing up doubtful cases of sinus thrombosis. It is not to be relied upon, however; for the whole lateral sinus may be quite normal and the clot limited entirely to the jugular bulb. In such cases we would expect to find granulations or carious bone upon the floor of the tympanic cavity.

The most characteristic and at the same time the most obvious symptom of septic thrombosis is the rigor produced by the entrance into the blood stream of toxins or bacteria. Graham[4] speaks of the remarkable complacency with which these startling symptoms occurring in ear cases are looked upon by many practitioners. We agree with him that one chill is not enough to confirm a diagnosis and that in the absence of enough other evidence to make the diagnosis, one should always wait for a second chill before operating. It may be possible for the patient to have both malaria and sinus thrombosis at the same time and thereby cause diagnostic confusion and dangerous delay. In like manner syphilis or erysipelas may cloud the isssue. According to Jansen[5], Hessler and others, thrombosis affects males 3½ times as often as females. The right side is more frequently affected than the left, which is probably due to the greater width of the right sinus.

The internal jugular vein may be thrombosed also. Then in addition to the ordinary signs of lateral sinus thrombosis there may also be infiltration of the tissues of the neck or tenderness along the anterior border of the sterno-mastoid muscle. Burghard[6] says the prevalent idea that a thrombosed jugular vein can be felt on palpation as a hard cord extending down the neck is erroneous. If anything is felt it is the enlarged cervical glands which lie along the vein. We fully agree with him that it is bad practice to palpate the internal jugular, as by doing so there is considerable danger of dislodging particles of the septic clot.

The prognosis is more favorable in sinus affections arising during an acute attack of otitis than in the chronic forms. The prognosis is decidedly unfavorable when meningitis, brain abscess, metastases in the lungs, or thrombosis of the cavernous sinus occurs.

To dwell upon the treatment of lateral sinus thrombosis now would be an unnecessary waste of time. But I will repeat for the sake of emphasis that early diagnosis is of paramount importance. Neither time nor trouble must be spared in this; and having made a positive, or reasonably positive, diagnosis, we must proceed without delay to open and clean out the infected thrombus as thoroughly as possible.

The following case clearly illustrates the importance of early diagnosis and operation in these cases:

Miss D., age 16, was brought to the Hospital June 5, 1916, by her family physician and I was called in to see her. She gave a history of measles eight years before followed by running ears ever since. Two weeks ago the right ear stopped discharging and she soon began having an aching pain in right side of head. Since then she has had five rigors and her temperature has varied from 99 to 103°. During that time she has been treated for malaria. Her appearance was good, she was well nourished and developed, had very good color, mind was clear, and she rested comfortably. T., 100.6°; P., 130; R., 26. No inflammation or swelling over the mastoid regions; slight tenderness on pressure over right mastoid. Right membrana typmpani appeared black and necrotic, and dark-colored granulations were visible in the middle ear through its opening.

We decided to do a radical mastoid at once and open the sinus if necessary. After making the primary post-auricular incision and elevating the periosteum forward to the bony meatus, we were surprised by a very profuse hemorrhage from the middle ear, which was controlled after a few minutes pressure applied by packing the middle ear. This unusual condition we later found was due to rupture of the walls of the lateral sinus above the thrombus. Removal of the outer plate of bone revealed one large, pulsating pus cavity comprising the middle ear, antrum and all the mastoid cells. This was filled with a thick cream-colored pus and rested directly upon the dura and lateral sinus, as all the bony covering had disappeared. The dura covering the temporal lobe was of a dark purplish hue, while the outer wall of the lateral sinus was black and necrotic, covered with granulations in part, and perforated at the upper margin of the thrombus whence the hemorrhage mentioned above had come. The patient was doing so badly we feared she would die upon the table. So after cleaning out the whole cavity as quickly as possible, we packed it lightly with iodoform gauze and put her to bed, hoping she would revive sufficiently for us to finish the operation later.

June 6—Patient much improved. T., 98°; P., 84; R., 24; Polynuclears, 90 %. Had rigor at 3

P. M., temperature going to 102.2°; and had another rigor at midnight.

June 7—T., 103.2°; P., 140; R., 28. Patient very weak, and although we feared she would pass away on the table, I obtained her father's reluctant consent to finish the operation. After ligating and dividing the internal jugular low down in the neck, and also the facial vein, we proceeded to expose the lateral sinus down to the jugular bulb and back well beyond the thrombus toward the longitudinal sinus. After packing it off above, the sinus was opened from end to end, the clot removed, the bulb curetted out thoroughly and irrigated by forcing normal saline through it and the jugular vein. All softened bone and necrotic soft tissue were then carefully removed from the mastoid and tympanic cavities; iodoform gauze and drainage tubes were introduced, and an external dressing was applied. The patient stood the operation well and was in fair condition next morning. T., 98.6°; P., 100; R., 20. She had no more rigors for three days, but continued to run an irregular temperature.

June 10 and 11—Severe rigors. Patient developing a septic color and temperature, which continues to get worse.

June 13—Severe epistaxis, controlled by ice packs. Spleen palpably enlarged. Patient restless and murmuring.

June 14—Patient profoundly septic and in a state of semi-coma. Pulse too weak to count.

June 15—Death occurred in early morning.

I failed to state that we gave her several injections of Mulford's staphylo-streptococcic bacterin.

This case presents some points of interest and a lesson in the importance of early recognition of these conditions:

1. Spontaneous rupture of the lateral sinus is very rare. The clot usually walls off the blood-stream well back of the necrotic sinus wall.

2. The mild nature of both the objective and subjective symptoms attending so much mastoid necrosis, together with this immense epidural abscess and extensive sinus thrombosis.

3. The absence of metastatic foci of infection during the whole three and a half weeks of its course.

4. Had a correct diagnosis been made two weeks earlier, when the patient had her first rigor, she would no doubt be alive today.

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Exchange Bldg.

Editor's Note.—Owing to the failure of the section reporter to send discussions in promptly, we have been compelled to omit several other important papers in the Eye, Ear, Nose and Throat Section that were scheduled to appear in this issue.

AUTHORS' ABSTRACTS

Eye, Ear, Nose and Throat

Why Corrective Lenses Often Fail to Give Relief in Headaches Due to Eye-Strain. R. O'Connor, Oakland, Calif., The Journal of Ophthalmology and Oto-Laryngology, November, 1916, p. 341.

The attempt is made to impress upon the general practitioner the fact that the most accurate pair of lenses accurately adjusted can, under certain conditions, fail to relieve symptoms due to eye-strain and may even increase them.

This occurs when the strain is due to improperly balanced extra-ocular muscles (more especially when this unbalance is against the rule for the refractive error) making difficult the alignment, of the two eyes, upon the object regarded.

The cause therefore lies in the disturbance in the accommodation-convergence relation produced by the lenses.

In hyperopia the accommodation is always active, even for distance, and with this goes a tendency to converge. Lenses by relieving accommodation proportionately lessen convergence. It is clear then that a hyperope with a divergence will have this increased by lenses and also his symptoms.

Similarly in myopes with convergence (esophoria) lenses by increasing the need for accommodation will increase the tendency to converge.

Lenses have no effect upon vertical deviations or upon cases of true insufficiency of convergence, or upon cases of true cyclophoria (tilting of the vertical axes).

In many cases, therefore, operation gives the only chance but it is evident that cases must be carefully studied.

Emphasis is placed on muscle-nerve physiology to explain the common failure of exercises.

Describes treatment and gives illustrative cases. Goes into detail in the anatomico-physiologic explanation of the way in which the eyes cause fifth nerve pain (headache).

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EDITORIAL DEPARTMENT

THE NEW YEAR

"The year
Has gone, and with it, many a glorious throng
Of happy dreams. Its mark is on each brow,
Its shadow in each heart. In its swift course,
It waved its scepter o'er the beautiful,
And they are not. It laid its pallid hand
Upon the strong man, and the haughty form
Is fallen, and the flashing eye is dim.
It trod the hall of revelry, where thronged
The bright and joyous, and the tearful wail
Of stricken ones is heard, where erst the song
And reckless shout resounded. It passed o'er
The battle plain, where sword and spear and shield
Flashed in the light of midday—and the strength
Of serried hosts is shivered, and the grass,
Green from the soil of carnage, waves above
The crushed and mouldering skeleton. It came
And faded like a wreath of mist at eve;
Yet, ere it melted in the viewless air,
It heralded its millions to their home
In the dim land of dreams."

"'Tis a time
For memory and for tears." . . .

One of the gems of literature is "The Closing Year" from the pen of Kentucky's great poet, George D. Prentice. It is perhaps a trifle morbid in sentiment, but for beauty of expression and for purity of thought it is a classic that is not excelled in any language. Its rereading at this season is appropriate and worth while. At the end of the old, and at the beginning of the new year is "a time for memory," but not many moments should be wasted in tears, though some hours may well be spent in healthful retrospection.

Merchants and manufacturers take stock of their wares and plants once a year and estimate their profits and losses, with the view to a thorough understanding of their business conditions and relations, in order that they might sell or produce more at less cost and with less wear and tear on their machinery, or physical equipment. It is just as important for the professional man to take stock of himself and of what he has done in the year 1916, to see if he has accomplished the results that he should have with the attainments and equipment which he possesses. He should study his conditions and environment in order that he might make the proper resolutions so to live that he may be more efficient in his work, more useful as a citizen and more successful in every way, in the year 1917.

Thoughtful men have little patience with the cynic who does not believe in, and who does not make New Year resolutions. Such a man is either mentally defective or a degenerate and may be cast aside as dead timber in life's edifice. The man with a vision, who looks to a future of usefulness and happiness, resolves at the beginning of each year, each month, each week and each day to do more conscientous work and to become a better man. Resolutions may be broken—all men fail in some of their efforts — but there is always hope for the man who resolves to do better things. As physicians and as men we should consider and profit by our mistakes, as well as to study methods for improving the service that we give our patients; and resolve to give the best that is in us to healing the sick, alleviating human suffering and preventing disease. Let each of us make and try to live up to the resolution to do his part in his particular sphere of life in order that 1917

may be the best, happiest and most useful year of our lives.

A nation should also take stock at least once a year and resolve to become a better country in which its inhabitants may enjoy health, happiness and prosperity. At the end of the year 1916 is surely "a time for memory and for tears" for the rulers of the nations that are making a charnel-house of Europe. If they could stop to consider that millions of the flower of the young manhood of their countries have been sacrificed, and that many millions more have been made to mourn, if they could comprehend the horrors of the war —the cause of which no man has yet explained — into which they have plunged their peoples, they would surely resolve to make any sacrifice of pride or power to make a lasting peace in the beginning of the year 1917. The courage and wisdom of President Wilson was never shown to better advantage than in his timely note to the warring nations urging them to consider ways and means for bringing about peace. All good men pray that those in authority in the belligerent countries may be made to realize that the continuation of war only increases the suffering of their people, that peace terms which all may accept with honor may be arranged and that the last great war of the world may soon become history.

Our own great Nation should take stock to see whither we are drifting and whether or not we are living up to our wonderful opportunities. The year 1916 was perhaps the most prosperous in our history, yet in that twelve months of peace and plenty nearly a million good Americans were killed and more than five millions wounded by enemies — tuberculosis, typhoid fever, pneumonia, malaria, hookworm, pellagra, infantile paralysis and other preventable diseases—that live in our own country. The year 1916 has witnessed the wise expenditure of hundreds of millions of dollars for military and naval preparedness against the invasion of foreign foes who may never come; yet our Government spends only a little more than two millions to destroy the enemies that are constantly waging war not only on men but upon defenseless women and children. It surely seems that at the beginning of a New Year is the time to resolve to make a better fight against disease.

To make warfare effective it is necessary to have a trained army, and Congress, early in the New Year, should enact legislation for sanitary preparedness in order to be ready for foes like infantile paralysis, tuberculosis, typhoid fever and other diseases that ought not to exist in civilized countries. The greatest need of the Nation is an adequate Department of Health, evolved out of the present United States Public Health Service, on the same footing as the War and Navy Departments.

We believe that in the year 1916 the greatest thing accomplished for American peace, efficiency and prosperity was the re-election of President Woodrow Wilson. More constructive legislation for the good of the whole people has been enacted and placed in practical operation during his administration than in any other similar period of our history. Many serious problems now confront Congress, but we believe that at the beginning of the year 1917 the greatest opportunity, as well as the most sacred obligation, for President Wilson and the statesmen in the United States Senate and the House of Representatives lies in the enactment of laws and in the appropriation of funds providing for an adequate Department of Health. The Declaration of Independence proclaimed to the world that among "the inalienable rights of men are life, liberty and the pursuit of happiness." With disease stalking abroad in the land

millions of our citizens are denied some or all these "inalienable rights" that our Government is supposed to guarantee.

Those in authority should no longer postpone the fulfilling of their duty to protect our people against disease. In the final paragraph of Prentice's "Closing Year" we are reminded that Time is not always a healer, but that

"Time is the tomb-builder, who holds his fierce career,
Dark, stern, all-pitiless, and pauses not
Amid the mighty wrecks that strew his path,
To sit and muse, like other conquerors,
Upon the fearful ruin he has wrought."

RATIONAL LIVING AT REDUCED COST

The hardships entailed by the increased cost of food is to be deplored, yet the agitation that has resulted from it will perhaps in the end make for the good of the human race; because, for the first time, the public is becoming interested in the study of dietetics. The crude experiment of the Chicago "diet squad" in proving that men can work and maintain normal weight at a cost of 30 cents a day did not add anything to scientific knowledge. But the menus used by this well-advertised group of men, while painfully faulty to those well informed in dietetics, contained about the right quantities of carbohydrates, proteins and fats, and the public has learned a little about, and is becoming interested in, food values, at least from the economic viewpoint.

Few realize that we are living under artificial conditions as related to the things that we eat and drink. A century ago sugar was a luxury, obtainable only by the rich. Today the average American stomach annually has shoveled into it sixty pounds of this carbohydrate that ferments most readily and which causes many of the digestive and nutritional disturbances from which civilized people suffer. We can reduce our sugar consumption from 50 to 75 % and be healthier and happier by so doing.

Cold storage plants and transportation facilities enable us to eat meat in any quantity three times a day. It does not seem to be generally known that an excess of meats, eggs, or other proteins putrify in the intestinal tract and generate toxins that produce arterio-sclerosis and shorten life. Metchnikoff did not prove his assertion that man should live to be two hundred years old. He died—probably from overwork—before attaining the biblical three score years and ten, but scientific knowledge is enriched and the world better off by his having proven that the putrefaction of proteins, particularly meats, in the intestines is perhaps the greatest cause of the infirmities of premature old age. Our meat bill can be reduced two-thirds, not to mention the fact that we would be better off if we only ate one-third the meat we now consume.

Recently thoughtful physicians have observed that many of their patients who have digestive, nervous, heart and kidney diseases give a history of the excessive use of coffee, tea or the soda fount caffeine beverages. They have also studied more carefully the physiological effects of caffeine and many medical men believe that the caffeine beverages are among the most important causes of the increase in the degenerative diseases. Coffee and tea have practically no food value except in the sugar and cream which are added to make them palatable, and aside from their harmful effects could well be dispensed with in the dietary of all of us. Abstinence from the caffeine beverages would not only reduce the cost of living, but would result in the betterment of the hu-

man race by lengthening the life of the average adult by perhaps five years.*

The importance of a well-balanced diet in maintaining health and efficiency can not be overestimated, yet few educated men have the slightest idea of the proper proportions and amounts of proteins (eggs, meats, fish, etc.), carbohydrates (breads, cereals, potatoes, sugars, etc.) and fats (butter, cream, fats of meats, vegetable oils, etc.) that are needed for each meal. Unfortunately many physicians are not well informed on the subject of dietetics and fail to instruct their patrons as to their nutritional needs.

We would not be understood as advising that meats and sweets be dispensed with altogether, though stimulants like coffee, tea and alcohol should have no place in a rational dietary. It is the excess of any one class of food that is harmful.

One egg for breakfast, a small portion of meat, fish or fowl for luncheon or dinner are enough proteins. Peas, beans, nuts and cream cheese have a large protein content and may take the place of meats.

One teaspoonful of sugar, on cereal or fruit, or its equivalent, a teaspoonful of honey or syrup, is enough at one meal, and a light dessert may be taken once a day. Bread, rice and potatoes—"the staff of life"—should constitute a considerable part of our food, but too much of them may cause trouble, though they are less likely to produce digestive disturbances than meats and sweets.

Fruits in season; the cereals like oatmeal, hominy, grits, etc.; milk, cream, butter and cream cheese, most vegetables, particularly spinach, lettuce, turnip and mustard "greens" and cabbage, should be eaten in abundance.

Refined cotton seed oil has a better flavor than olive oil and is quite as wholesome—indeed most of the olive oil sold on the market is refined cotton seed oil to which a little olive oil has been added to give it the olive flavor. The cotton seed oil products may also be used as substitutes for butter and lard. They are as palatable, have as good food values and are very much cheaper.

Most of the spices, pepper sauces and other condiments should be dispensed with altogether. The taste for them is cultivated—learned from the ignorant people of the tropics—and they are harmful since they are stimulants to the stomach, producing an abnormal appetite, and their excessive use results in the acid dyspepsias. The only needful flavoring for food, in addition to the extractives in meats, fruits and vegetables which are really more palatable than any artificial condiment that can be added, is salt; and too much of that is harmful. One food expert is responsible for the statement that "we are pickling our bodies with the brine that we make in adding so much salt to our foods."

Pediatricians prescribe the diet for children even when well, up to the age of five years, and it now looks as if the time is rapidly coming when physicians will be called upon to prescribe diets for normal adults to keep them in good health. Physicians should, therefore, seriously take up the study of dietetics in order that they may meet the demands of their patients for specific information regarding diet both for the sick and for the man who desires to be 100 % efficient throughout a long life.

*For a more detailed discussion of the caffeine beverages the reader is referred to an editorial in the August Journal, a reprint of which will be gladly sent to any one who may be interested.

THE NECESSARY TRAINING FOR A HEALTH OFFICER

In former times it was the universal custom the country over to elect a health

officer with little or no thought of his qualifications for the position, the idea being deep-rooted in the American people that the degree of M.D. carried with it a full knowledge of all matters both directly and indirectly pertaining to public health. Then it was only too common to see "old Doctor So-and-So" chosen because he was too old any longer to earn a livelihood, or "young Dr. Blank" because he was too much of a neophyte to be paying his expenses. A third type of man was the political doctor whose suave manner and the number of important "wires" at his command enabled him to secure the position and thus supplement an income from an often incompetent practice.

Rarely was the health officer chosen because he displayed a genuine interest in public health matters, or because his training had peculiarly fitted him for that calling. In stating these conditions as existing solely in the past, it would be obviously unfair to our predecessors, for the same hold true in many communities today.

In a small volume of nine chapters on the order of light essays, Dr. Henry Bixby Hemenway* has given us his "American Public Health Protection." It is one of the most readable volumes which has reached the Editor's shelf in many a day, and it is as enlightening as it is entertaining.

Hemenway shows that far from being a plum for political favorites, a substitute for the poor house, or a veiled pension for superannuated practitioners, the position of health officer is one of the most important in the gift of the people. In any community there are usually dozens of men who would make capable tax collectors, treasurers, etc. But the position of health officer can not be filled creditably by the average physician even though honest and intelligent, despite the popular belief to the contrary.

No branch of medicine is capable of a higher degree of specialization, or departs further from the requirements in the field of general practice than that of public health administration. It calls for a man of ability and thorough training to combine the diagnostic acumen of the practitioner with the refined technique of the bacteriologist, the overlapping technical science of sanitary engineering with the skill of the clinical microscopist, the faithfulness to detail of the statistician with the watchful clinical eye of the pediatrist in detecting eruptive fevers, etc. And what is far from the least important of his qualifications, and a matter which Hemenway considers of even more value than the training for an M.D., is a good working knowledge of veterinary medicine in so far as it relates to meat inspection and the detection of diseases communicable from lower animals to man.

It is hoped that many people, laity as well as physicians, will become better informed upon the question of the whole-time, trained health officer, his evolution, his requisites and his duties. It would be the first step toward adopting Hemenway's wise and practical suggestions, which in turn would result in our becoming a healthier people.

*Hemenway, H. B.: American Public Health Protection, Indianapolis: The Bobbs-Merrill Co., 1916.

OUR OPPORTUNITIES AND RESPONSIBILITIES

Under the above title the presidential address of Dr. Robert Wilson, Jr., as published in the December number of THE JOURNAL, is a classic that will appeal to every physician in the South.

Though a young man, Dr. Wilson, in his dignity and courteous bearing, unconsciously gives the impression of being a chivalrous gentleman of ante-bellum days;

and when he talks of his beloved Southland the conclusion is certain that he was reared in an environment in which the history and traditions of the South are held sacred. Where better than in the culture and refinement of Charleston could such a gentleman be nurtured? Yet Dr. Wilson is thoroughly progressive and scientific. He is recognized as one of the leading men in American medicine. The wonderful development of the Medical College of South Carolina, until it is recognized as a Class A medical school, is a tribute to his leadership as Dean of an exceptionally able faculty.

No one better than Dr. Wilson understands the medical needs of the South, and no one has better expressed the reasons for the existence of the Southern Medical Association than he has done in the following paragraph:

"It is the purpose of the Southern Medical Association to stimulate higher professional attainments and to work for better sanitary conditions; it aims to promote more accurate knowledge of the diseases which prevail in our midst, to bring about a clearer insight into the medical and sanitary problems which affect social and economic conditions and exert a devitalizing influence upon us, and to encourage higher endeavor and more productive effort. By faithfully performing these functions we shall build here in the South the only foundation upon which prosperity and greatness can rest, a strong and healthy citizenship."

Dr. Wilson discussed the medical problems of the South with unusual force and with a clear conception of our opportunities and responsibilities to solve them. He recognizes the fact that malaria, uncinariasis and other tropical diseases, added to the Negro as a public health problem, have greatly retarded the development of the region known as the South; and rightly proposes that the medical profession, particularly as represented by the Southern Medical Association, shall lead the way for a "greater Nation through a sanitary and a greater South."

Medical education as related to the South forms an important part of Dr. Wilson's address and what he says on this subject carries the weight of authority. He feels that the function of the medical school is not only to give instruction to students, but to do research work, and, what few schools attempt, to instruct the public. He aptly says: "They who have the knowledge have no right to leave the public to their follies and superstitions without attempting to enlighten them."

Dr. Wilson's address is fully up to the high standard of the messages from the former presidents of the Southern Medical Association. If any physician in the South has not read it he should lose no time in having as a part of his medical information that contained in Dr. Wilson's address. It is also worth rereading.

MEDICAL PREPAREDNESS IN THE NAVY

One of the most notable addresses delivered before the recent meeting of the Southern Medical Association was by Dr. Cary T. Grayson, a Surgeon in the United States Navy. Dr. Grayson is a physician of marked ability and of unusual attainments, and has a charming personality, or he could not have had the distinction of serving as Naval Aide and personal physician to three Presidents—Roosevelt, Taft and Wilson. Despite his association with Presidents, Dr. Grayson is thoroughly democratic and evidently was delighted to have the privilege of associating with the members of the Southern Medical Association, of which he is a most enthusiastic member.

Dr. Grayson brought a message of greetings from President Wilson, which was greatly appreciated by the members of the Southern Medical Association, who

were rejoicing over and were celebrating the re-election of the greatest statesman of the twentieth century as President of the United States. Wild applause greeted every mention of the name of President Wilson, and one of the causes of the optimistic spirit of the Atlanta meeting was the feeling that we will have "four more years of Wilson."

Dr. Grayson's address on "What the Medical Man Is Doing for Preparedness in the Navy" was timely, because never before in history have more advances been made in caring for the sick and wounded sailors both in time of war and peace than have been begun or have been carried out in our own Navy. The credit that he gave to Secretary Daniels and to Surgeon General Braisted, for the expansion of the Medical Department of the Navy, and for making it more efficient in every respect, should silence the criticis of the two men who have done more to promote efficiency in the Navy than any other two men who have served in similar positions.

Dr. Grayson briefly discussed the history of the Medical Department of the Navy from its humble beginning in 1783, mentioning the work of Barton, Rush, Whelan, Squibb and others up to the time of Surgeon General Rixey, who built the present magnificent naval hospitals and established the Naval Medical School in Washington. He then outlined the wonderful medical service of the Navy as it has been broadened in its scope by Surgeon General Braisted. He also briefly described the miniature but well equipped hospitals in each battleship and the magnificent hospital ship to cost $2,300,000, the first hospital ship ever built by any country.

His description of the duties and opportunities of the medical officer of the Navy and the difference in his work and that of the medical man in civil life was particularly interesting; and he convinced every one who heard him that the Medical Corps of the United States Navy is keeping abreast with, and often leads in, medical progress.

Dr. Grayson called attention to the recent act of Congress providing for an increase of 350 medical officers in the Naval Medical Corps. It is an excellent opportunity for well prepared young physicians who desire to practice their profession under the most favorable circumstances and at the same time dedicate their lives to the service of their country.

THE DISPENSARY AS A FACTOR IN TEACHING

It is a safe standard of comparison to judge progress of the profession in any city by the character of its dispensaries. Careful work among the poor can not exist without correspondingly scientific efforts being exerted in private practice. Habits acquired in the one class of cases will certainly be utilized in the other to their mutual benefit.

Dean W. S. Elkin, of the Atlanta Medical College, a man to whom this Association owes a lasting debt of gratitude for his inestimable aid in making the Atlanta meeting the greatest in its history, contributes elsewhere in this number a most creditable article on "The Utilization of the Dispensary in Medical Teaching." There can be no doubt that the value of this branch of teaching is oftentimes underestimated. In so doing a wonderful teaching asset, and the greatest of all teaching agencies for beginners, is lost.

The dispensary, or out-patient clinic, is the ideal place for training students for handling ambulatory cases of the type comprising fully 90 % of those entering a doctor's office. Then, too, it affords equally good training for pupil nurses, and above all for disseminating the principles of hy-

giene and preventive medicine among the class which needs it most.

As Dr. Elkin points out, the Social Service Department is an extremely important adjunct to the dispensary, and one which is usually lacking for want of funds. He estimates that its work in weeding out the impostors, classifying the needy, and following up treatment in the homes, means a saving of 50 % of the work otherwise done by a dispensary.

BEARDS AS DISEASE CARRIERS.

The French mustache and goatee have long become as symbolic of the race as have the mutton-chop side-whiskers of the Englishman; and it must look queer indeed to see the former all deprived of their hirsute insignia of manhood, for the French government is said to have issued an order to its soldiers: "Shave your face clean".

Back of it all it simply means that the sanitarians have come to realize that in the trenches and in camps in particular it is practically impossible to approach cleanliness at best, and much less so when the face is covered with hair. The same argument could be used against the hair on the scalp if it were not remembered that the latter neither borders the mouth and nose, nor does it come into contact with the air breathed or the food eaten.

In this connection one naturally thinks of the beard and mustache as factors in disease dissemination. Do they carry micro-organisms? Frankly speaking there can be no doubt in our mind that they do, notwithstanding the fact that they have the precedent of ages back of them and that they have been worn by many celebrities in the past, as well as by dozens of illustrious men in the profession today.

When a physician sees a puzzling case, he usually thinks; and when he ponders over the situation, what could be more natural than that he should stroke his beard or roll his mustache? Granting that he washes his hands between cases, which is by no means the rule, he certainly will not wash his beard or mustache that often, and so the next case will be handled with hands which ever and anon pull at the facial trimmings. Are we too theoretical? Perhaps so; but to our mind, such ornamentation is for one of these purposes: to yield a masculine appearance and thus inspire confidence, to give a look of maturity, or to hide a weak mouth or chin. It seldom does more than the second, and we believe it is setting a bad example to the laity to cover our faces with a dust-harboring coat of hair.

Another serious blow to wearing beards was the overwhelming vote of the citizens of the United States to place a clean shaven man in the White House, thus demonstrating the danger of whiskers for candidates. Some also suspect that whiskers may harbor the germs of "judicial paralysis". If all those who desire office should see the wisdom of going clean shaven, beards would become rare in America.

But seriously speaking, for sanitary reasons as well as for the cosmetic effect, it seems that the Caucassian will soon become a clean shaven race.

THE NEW JOURNAL OF MEDICAL INSURANCE AND HEALTH CONSERVATION.

THE JOURNAL is pleased to note the appearance of a new sail upon the medical horizon in the form of a monthly journal called *Medical Insurance and Health Conservation*, under the able editorship of Dr. M. M. Smith, of Dallas, Tex. The latter will be recalled as the head of *The Texas Medical News*, which publication, after twenty-five years of successful work, decided to change its policy and name and become national in scope.

It is seldom that an enterprise is begun

without finding its early years of existence beset with keen competition. *Medical Insurance and Health Conservation* is therefore singularly fortunate in being the only periodical of its kind in the field, in having the hearty backing of influential men all over America, and in publishing its first issue with a subscription list twice that of its predecessor. Furthermore, it has already been endorsed by the Medical Section of the National Fraternal Congress of America and by the members of the Medical Section of the American Life Convention.

When one considers the vast number of physicians who are either medical directors or medical examiners for insurance companies (estimated at 50 % of all practitioners), it will readily be seen how many men must needs be interested in the appearance of this publication.

We extend cordial greetings and best wishes for an early realization of that marked degree of success which its timeliness and competent management render it certain of attaining.

BOOK REVIEWS

Mechanism of Character Formation

An Introduction to Psychoanalysis. By William A. White, M.D. New York: The Macmillan Co., 1916. Cloth, $1.75.

According to Dr. White, psychology has made so few notable contributions to medical science, because the individual has been considered as a mere metaphysical abstraction or as a problem in physiology. The new method of approach must be one which considers man as a social animal.

Dr. White accepts the Freudian theory that clear conscious awareness arises only at moments of conflict, when a new adjustment must be made by the individual. At the conscious level, as at any other level, an adjustment is made possible by a redistribution of energy. The distinguishing characteristic of the conscious level, however, is that a symbol, and not a mechanical force, is the vehicle which carries the energy from person to person.

In the social milieu, all variations from the previous formulations of society, occasion a conflict, thus bringing the issue to the conscious level. Most variations are rejected, but occasionally sufficient motives are found for accepting a new formulation. The symbol, once accepted, becomes the starting point for further conflicts.

The central idea of Dr. White's book is that "the energetics of the symbolic level is the new avenue of approach to an understanding of man." As the enormous energy-releasing capacity of a symbol may be understood only as we think of individuals as vehicles for the transmission of energy, we must consider conscious life as a part of the same energy which manifests itself in all living beings.

Dr. White has handled his unique subject most ably and in a very illuminating manner.

A Text-Book of Organic Chemistry

For Students of Medicine and Biology. By E. V. McCollum, Ph.D., Professor of Agricultural Chemistry, University of Wisconsin. 426 pages, illustrated. New York: The Macmillan Co., 1916.

We have seen no other book which treats of medical and biological chemistry in exactly the same way as that employed by Professor McCollum. As the author says, he "emphasizes the biological rather than the synthetic and technical viewpoint. . . . In all cases the effort has been to select for purposes of illustration those compounds which have biological importance rather than technical." The book is particularly commendable in not attempting to burden the student's mind with useless detail and endless formulae, whose knowledge offers no especial advantages. No more data is given than it is reasonable to expect one to remember.

A Text-Book of Histology

By Frederick R. Bailey, A.M., M.D., Fifth Edition, 652 pages, profusely illustrated. New York: William Wood & Co., 1916. Cloth, $3.75.

The great advances now being made in anatomy are confined almost exclusively to histology and embryology. Hence it is most essential for a text-book on either of those subjects to undergo frequent revisions. This edition of Dr. Bailey's book seems to have been brought well up to date.

Personal Health. A Doctor Book for Discriminating People. By William Brady, M.D., Elmira, New York. 12mo. 407 pages. Philadelphia and London: W. B. Saunders Co., 1916. Cloth, $1.50.

One would naturally expect to find in this a work on self-medication. In reality it deals very little with that side of the subject. It is a very creditable treatise on personal hygiene for the laity.

General Medicine. Vol. VI, Series 1916. Practical Medical Series. By Frank Billings, M.S., M.D., Head of Med. Dept. and Dean of Faculty, Rush Med. College, Chicago, Assisted by Burrell O. Raulston, A.B., M.D., Resident Pathologist, Presbyterian Hospital. Under General Editorial Charge of Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis, Northwestern University Medical School. 342 pages, illustrated. Chicago: The Year Book Publishers, $1.50.

A good review of the principal advances in internal medicine of the previous twelve months. Particularly useful to the busy practitioner whose time does not permit his covering the large amount of literature in the several languages necessary to acquire the facts.

Progressive Medicine

A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics, Materia Medica and Diagnosis, Jefferson Medical College, Assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. Vol. XIX, No. 1, March 1, 1916; Vol. XIX, No. 2, June 1, 1916; Vol. XIX, No. 3, Sept. 1, 1916; Vol. XIX, No. 4, Dec. 1, 1916. About four or five hundred pages each, illustrated. Philadelphia and New York: Lea & Febiger, 1916. $6.00 per annum.

The above four numbers make up the year's issue of "Progressive Medicine", a total of about 2,000 pages. Practically no field of medicine is neglected, all branches being represented in the digests of the latest work which is being done along those lines. The invaluable nature of such a quarterly, which supplies information which could not be gleaned from the literature in any other way, renders "Progressive Medicine" indispensable, no matter in what kind of work a physician may be engaged. It is a distinct privilege to have access to such a wealth of information.

International Clinics

A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and Other Topics of Interest to Students and Practitioners. Edited by H. R. M. Landis, M.D., Philadelphia, with many collaborators. Vol. IV, Twenty-sixth Series, 1916. 307 pages, illustrated. Philadelphia and London: J. B. Lippincott Co., 1916.

An unusually good number even for "International Clinics" which is always creditable. The monographs are upon well-selected subjects and are ably handled by men of authority.

Diseases of Children

By Edwin E. Graham, A.B., M.D., Professor of Diseases of Children, Jefferson Medical College; Pediatrist, Jefferson Medical College Hospital, and to the Philadelphia General Hospital, Philadelphia, etc. 902 pages, illustrated with 89 engravings and 4 plates. Philadelphia and New York: Lea & Febiger, 1916.

A very creditable book, practical in every detail and well illustrated.

Venesection

A Brief Summary of the Practical Value of Venesection in Diseases. For Students and Practicians of Medicine. By Walton Forrest Dutton, M.D., 220 pages. Illustrated with Several Text Engravings and Three Full-page Plates, one in colors.

This is a very carefully compiled treatise on one of the most ancient and useful medical procedures. "The book is meant to give, in a concise and convenient way, the therapeutic value of an agent which has been used successfully by some of the most eminent physicians of past centuries, and will continue to be used as long as the human body is heir to disease." It contains a good account of the history of phlebotomy, sections on hematology, blood pressure, the indications for, and the technique of, venesection, as well as a detailed description of the application of blood-letting to a large number of diseases.

By way of criticism we might first call attention to the conspicuous lack of careful proof-reading. Secondly, he describes only the method of stabbing the vein with a bistoury, omitting entirely the other and often neater plan of applying a tourniquet and then introducing a large-bored needle through the skin into the vein. Thirdly, in the brief section on blood transfusion only the vessel-to-vessel clamp method of McGrath is given, the author ignoring the popular and present day tendency to use one of the several indirect devices which have revolutionized transfusion, robbed it of its spectacular features, and placed it upon a firm therapeutic basis well within the domain of the general practitioner.

On the whole we are well pleased with this unique little book which is the first which has attempted to cover this particular field, and which has done it in a pains-taking, scholarly and altogether satisfactory manner.

Applied Immunology

The Practical Application of Sera and Bacterins Prophylactically, Diagnostically and Therapeutically, with an Appendix on Serum Treatment of Hemorrhage, Organotherapy and Chemotherapy. By B. A. Thomas, A.M., M.D., Professor of Genito-Urinary Surgery, Polyclinic Hospital and College for Graduates in Medicine; Instructor in Surgery, University of Pennsylvania; Associate in the William Pepper Laboratory of Clinical Medicine, and R. H. Ivy, M.D., D.D.S., Assistant Instructor in Surgery, University of Pennsylvania; Instructor in Genito-Urinary Surgery, Polyclinic Hospital and College for Graduates in Medicine, Philadelphia. Second Edition Revised. 364 pages, 5 colored inserts and 68 illustrations. Philadelphia and London: J. B. Lippincott Co., 1916. Cloth, $4.00.

The main feature of the work is its effort to render the technical subject of Immunoloy, which is so often discussed in terms calculated to confuse the average practitioner, easily intelligible to those who are neither engaged in laboratory investigation nor working exclusively in internal medicine. This, of course, includes ordinary vaccine therapy, Ehrlich's side-chain theory, the Widal phenomenon, the Wassermann reaction, tuberculin treatment, phagocytosis, the opsonic index, serum therapy for hemorrhage, organotherapy, etc. Notwithstanding the fact that it is very simply told, at the same time it is quite an instructive and useful volume.

Pharmacology and Therapeutics

For Students and Practitioners of Medicine. By Horatio C. Wood, Jr., M.D., Professor of Pharmacology and Therapeutics, University of Pennsylvania; Second Vice-Chairman of Committee of Revision of the U. S. Pharmacopoea. Second Edition, 455 pages. Illustrated. Philadelphia and London: J. B. Lippincott Co., 1916. Cloth, $4.00.

This edition is modified to meet the changes as found in the new Ninth Edition of the U. S. Pharmacopoea, showing revisions in the sections on a dozen or so drugs, and the addition of about twenty new preparations. We note with approval the adoption of the British term "mil" for "c. c.". This is a fairly good book, which is much more than can be said of most works on the subject. Usually in such text-books when the pharmacology is creditable the therapeutics is mediocre, and vice versa.

A Text-Book on Practical Therapeutics

With Especial Reference to the Application of Remedial Measures to Disease and Their Employment Upon a Rational Basis. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics, Materia Medica, and Diagnosis, Jefferson Medical College; One-time Clinical Professor of Diseases of Children, University of Pennsylvania. Sixteenth Edition, Enlarged, Thoroughly Revised, and Largely Rewritten. Illustrated with 149 Engravings and 7 Plates. 1009 pages. Philadelphia and New York: Lea & Febiger, 1916.

Our objections to this edition of the work are the same as those offered to previous editions. Its pharmacology is not always in accord with the latest teaching and the prescriptions are oftentimes too empirical and too numerous. In other words there is a remedy for every ailment. Professor Hare's seeming over-faith in drugs may well be illustrated by a statement under the section on "Phylacogens" (p. 614): "These products give fully as good results as vaccine therapy, and seem to be peculiarly efficacious in acute and chronic rheumatism of the joints, gonorrheal rheumatism, and in erysipelas and in pneumonia." To those seeking "a pill for every pain" we heartily recommend this book.

A Manual of Otology

For Students and Practitioners. By Charles Edwin Perkins, M.D., F.A.C.S., Professor of Clinical Otology, New York University and Bellevue Hospital Medical College; Associate Aural Surgeon, St. Luke's Hospital; Assistant Aural Surgeon, New York Eye and Ear Infirmary, etc. 445 pages. Illustrated with 120 engravings. Philadelphia and New York: Lea & Febiger, 1916.

This is a clear, forceful, concise and thoroughly satisfactory work for one looking for a manual on otology. The illustrations are fair, the arrangement of the book is good, and the subject matter is most excellent. It is perhaps not an exaggeration to say that it is the best hand-book on that subject that has been published.

A Text-Book of Practical Gynecology

For Practitioners and Students. By D. Tod Gilliam, M.D., Emeritus Professor of Gynecology, Ohio State University College of Medicine; and Sometime Professor of Gynecology, Starling Medical College; Gynecologist to St. Anthony and St. Francis Hospitals, etc., and Earl M. Gilliam, M.D., Professor of Diseases of Women, Ohio State University College of Medicine, Columbus, Ohio, etc. Fifth Revised Edition. 681 pages. 352 engravings, a colored frontispiece and 13 full-page half-tone plates. Philadelphia: F. A. Davis Co., 1916. Cloth, $5.00.

This new edition brings the work up to the minute in most respects. Being a mere hand-book, it naturally can not go very deeply into every subject. Consequently the author discusses the most important conditions and gives what he considers the approved methods of handling them. Dr. Gilliam not only has contributed to gynecology a splendid round ligament suspension of the uterus, which, with its excellent modification by the master hand of Howard A. Kelly, constitutes perhaps our best operation for retrodisplacement in general, but he has embodied in his manual the rare fruits of a long life of gynecological practice.

As pleased as we are with his book, we can not refrain from mentioning the absence of any reference to the use of the Roentgen ray and radium in so-called idiopathic uterine bleeding, in the treatment of certain fibroids of the uterus, and of radium in inoperable and post-operative uterine cancer. Certainly that is a field whose im-

portance must hold the attention of all gynecologists who would keep abreast of the times. This omission would be of still more consequence were radium accessible to the rank and file of the profession.

The Principles and Practice of Perimetry

By Luther C. Peter, A.M., M.D., F.A.C.S., Associate Professor of Ophthalmology, Philadelphia Polyclinic and College for Graduates in Medicine; Ophthalmologist to Rush Hospital for Consumption and Allied Diseases. 232 pages. Illustrated with 119 Engravings. Philadelphia and New York: Lea & Febiger, 1916.

In this very comprehensive work the author says he hopes "to stimulate, if possible, greater interest in the practice of perimetry" and that he hopes "it may be the means of stimulating interest in the minute study of the visual field as a refinement in diagnosis."

The first incentive within itself is sufficient apology, if such were needed, for so excellent a work.

Refraction of the Human Eye and Methods of Estimating the Refraction

Including a Section on the Fitting of Spectacles and Eye-Glasses, etc. By James Thorington, A.M., M.D., Emeritus Professor of Diseases of the Eye, Philadelphia Polyclinic and College for Graduates in Medicine; Member of the American Opthalmological Society; Fellow of the College of Physicians of Philadelphia, etc. 407 pages. 344 Illustrations, of which 27 are colored. Philadelphia: P. Blakiston's Son & Co., 1916. Cloth, $2.50.

This work is well up to the author's usual high standard; and his plan of amalgamating his three former works, "Refraction and How to Refract," "Prisms," and "Retinoscopy," is a very excellent one.

While the tendency of American authors is to include more subject matter than can well be treated, there is also another possible extreme of having a multiplicity of works upon very closely allied topics. Dr. Thorington has produced a book of great practical value, and one with which we are well pleased.

OTHER BOOKS RECEIVED.

International Clinics—A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and other Topics of Interest to Students and Practitioners. Edited by H. R. M. Landis, M.D., etc. Vol. III. Twenty-sixth Series. 309 pages. Philadelphia and London: J. B. Lippincott Co., 1916.

Annual Report of the Surgeon-General of the Public Health Service of the United States. For the Fiscal Year 1916. Washington: Government Printing Office, 1916.

Materia Medica for Nurses. By A. S. Blumgarten, M.D., Admitting Physician, German Hospital; Lecturer, Training Schools, German Hospital and Skin and Cancer Hospital, New York; Joint Author of "Children's Diseases for Nurses," etc. 651 pages, Second edition, completely revised, with additions and new illustrations. New York: The MacMillan Co., 1916. Cloth, $2.50.

The Practice of Urology. A Surgical Treatise on Genito-Urinary Diseases Including Syphilis. By Charles H. Chetwood, M.D., LL.D., F.A.C.S., Professor of Genito-Urinary Surgery, New York Polyclinic; Visiting Surgeon, Bellevue Hospital; Special Consulting Surgeon, Knickerbocker Hospital, St. Johns Hospital (L. I. City), Nassau Hospital (Mineola), White Plains Hospital; Member American Association Genito-Urinary Surgeons, American Urological Association; L'Association Internationale D'Urologie, etc. Second edition, profusely illustrated, 825 pages. New York: William Wood & Co., 1916. Cloth, $5.50.

SOUTHERN MEDICAL NEWS

ALABAMA

At Mobile, Assistant Surgeon T. J. Liddel is in temporary charge of the Marine Hospital during the absence of Surgeon J. T. Burkhalter.

At Tuscaloosa, there has recently been conducted a campaign for securing funds to carry on the fight against tuberculosis for the coming year.

At Bessemer, plans are being formulated for the erection of a new hospital.

At Montgomery, Dr. Sien Ming Woo, a Boston medical student and native of Southern China, recently visited the State Health Department on his tour of investigation of American health methods.

At Tuscaloosa, after a nine months' health campaign under the direction of Dr. J. J. Durrett, all-time Health Officer, and Dr. F. S. Harrington, U. S. P. H. S., the City has been declared 99 % sanitary.

At Anniston, the physicians of the City have been requested to report all cases of tuberculosis. It has been rumored that if conditions warrant, a hospital for treatment of the indigent cases will be endowed.

At Montgomery, recently, the ruling of the Demopolis school board to the effect that no child should be allowed to attend the schools unless vaccinated was upheld by the Supreme Court.

At Birmingham, a winter campaign against flies has been declared by the County Health Officer.

At Montgomery, Dr. Cummings McCall, of the State Pasteur Institute, was recently injured by a Negro whose arrest he was attempting to request by phone to the Police Department.

At Birmingham, at a recent meeting of the Jefferson County Medical Society, Dr. F. S. Harrington, of the United States Public Health Service, was elected to act during the following year as Health Officer for the county and empowered to appoint his own assistants. This is the initial step in the establishment of the unified health system as recommended by Dr. Carroll Fox, of the United States Public Health Service.

Deaths

Dr. Ralph M. Russell, of Birmingham, died suddenly at a local hospital on November 5.

Dr. Allen J. Garrett, Tallassee, died at his home in that City on July 16 at the age of 54.

ARKANSAS

At the final meeting of the State Board of Health on Nov. 19, the following officers were elected for the ensuing year: President, Dr. J. T. Clegg, Siloam Springs; Vice President, Dr. B. A. Fletcher, Augusta.

At Little Rock, the people of the City have just completed a very successful campaign for the purpose of raising $200,000 for the erection of a new city hospital.

Deaths

Dr. J. W. Webster, aged 69, died at his home in Siloam Springs on Oct. 23.

Dr. Horace W. Johnson, Little Rock, died in a local hospital on Oct. 14 at 64 years of age.

Dr. G. M. Black, Pocahontas, died May, 1916.

Dr. H. J. F. Garret died at Hope on Nov. 17.

Dr. E. M. Jennings, Mena, died at the home of his son in Beeville, Tex., on Oct. 27.

DISTRICT OF COLUMBIA

Dr. George Wythe Cook was the guest of honor at a dinner given recently by the Medical Society of Washington on the occasion of his seventieth birthday.

Dr. J. D. Long, U. S. P. H. S., in a recent report, states that since the American occupation the scourge of the islands have been effectively of the Philippine Islands the epidemics so long controlled.

At Washington, Dr. J. J. Kinyoun, who has recently been engaged in health work in Winston-Salem, N. C., has resumed his duties in that City.

At Washington, Dr. J. A. Murphy has been appointed Chief Medical and Sanitary Inspector of public schools.

At Washington, there was held, on Nov. 15, the fall meeting of the Medical Society of Northern Virginia and the District of Columbia, Dr. H. A. Fowler, Washington, presiding.

At Washington, on Nov. 13, the Chamber of Commerce of that City passed a resolution urging a National Department of Health.

Lieut. W. P. Baker, M. R. C., U. S. Army, Washington, D. C., was married to Miss Margarete Darvas, M.D., of New York City, on Nov. 4.

Deaths

Lieutenant-Colonel E. A. Mearns, M. C., U. S. Army (retired), aged 60, died at his home in Washington on Nov. 1.

Dr. H. L. Gosling, aged 61, died at his home in Washington on Nov. 1. At the time of his death he was Assistant Chief of the Division for Operation of the Coast Guard.

FLORIDA

At the recent meeting of the physicians of West Florida and South Alabama at Pensacola, the body was organized under the name of the West Florida and South Alabama Medical Association. Officers for the ensuing year were elected as follows: Dr. Louis DeM. Blocker, President; Dr. M. S. Davies, Dothan, Ala., and Dr. E. Porter Webb, Laurel Hill, Vice Presidents, and Dr. F. A. Brink, Secretary-Treasurer. Pensacola will be the next place of meeting.

At a meeting of the Santa Rosa Medical Society (Florida) on Dec. 5 the following officers were elected: Dr. A. C. Carter, Milton, President; Dr. J. C. Holley, Pace, Vice President, and Z. V. Johnston, Milton, Secretary.

At Pensacola, Assistant Surgeon H. A. Spencer has succeeded Dr. Knight as Port Physician.

Deaths

Dr. W. H. Conibear, Lakeland, 72 years old, died from carcinoma of the liver on Oct. 25.

GEORGIA

At Valdosta, on Nov. 21, there was held a meeting of the Eleventh District Medical Association.

At Milledgeville, Assistant Surgeon G. A. Wheeler, U. S. P. H. S., engaged in the observation of dietary studies in relation to pellagra.

At Atlanta, a physician has placed himself in the Federal Prison to take the cure for drug addiction. He won his way into the prison by prescribing morphine for himself illegally.

At Atlanta, Dr. J. P. Kennedy, City Health Officer, is urging the erection of a larger city hospital.

At Tifton, the Big Bend school has the distinction of being the first rural school in the United States to request public inoculation against pertussis.

Dr. F. C. Folks, of Waycross, is reported to be seriously ill at his home in that City following a stroke of paralysis.

Deaths

Dr. W. M. Sneath, Tifton, died at his home in that City on Oct. 26 from tuberculosis.

Dr. J. H. Cheesling, Greensboro, 60 years of age, died on Nov. 20 following an operation in an Atlanta hospital.

KENTUCKY

At Hopkinsville, at a meeting of the house of delegates of the State Medical Association, Dr. Milton Board, Louisville, was elected President. The following officers of the Association were chosen at the meeting of same which followed: Dr. Philip H. Stewart, Paducah, President; Drs. Ben P. Earle, Charleston; Albert S. Grady, Greenup, and Joseph G. Gaither, Hopkinsville, Vice Presidents. The next meeting of the Association will be held at Ashland.

It has been announced by the editors of the Louisville Monthly Journal of Medicine and Surgery that, beginning January, 1917, this journal will become the official organ of the Mississippi Valley Medical Association and the name of the journal will be the Mississippi Valley Medical Journal. Dr. H. E. Tuley will continue as editor.

At Whitesburg, Dr. I. A. Shirley, of Winchester, councilor of the district, recently organized the physicians of Fletcher County into a medical society.

At Louisville, Dr. John Karagiozian has been

(Continued on page 28)

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(Continued from page 86)

fined $250 for violating the Federal anti-narcotic law and promised prosecution on twenty-five other charges held against him if hailed before the courts again for such offense.

At Lexington, Dr. B. L. Wyatt, of the Trudeau Sanitarium, Saranac Lake, N. Y., has been chosen as Superintendent of the Fayette County Tuberculosis Sanitarium, whose cornerstone was laid on Nov. 15.

At Louisville, according to the most recent report of the Board of Health, the deaths from tuberculosis have been decreased 30 % by the strenuous campaign recently carried on.

At Bowling Green, Dr. Giles E. Townsend was recently reported to be seriously ill following a hemorhage from the stomach.

Deaths

Dr. McClelland Kash, Salyrsville, died in Daysboro on Oct. 24.

Dr. J. M. Dennis, aged 82 and a civil war veteran, died at his home in Hopkinsville on Oct. 18.

Dr. C. W. Lester, Guthrie, died at his home in that City on Oct. 11.

Dr. I. A. Lex, of Irvington, died at a Louisville infirmary on Oct. 26.

Dr. H. B. Maggard, Hazard, died suddenly at French Lick Springs, Ind., recently.

Dr. Willoughby Walling died recently at his home in Chicago. He was formerly a citizen of Louisville.

Dr. C. H. Todd, aged 78, died at his home in Shelby County on Nov. 12. He was a regimental surgeon in the Confederate Army.

LOUISIANA

At New Orleans, a committee from the local medical society has exonerated Dr. Arthur Whitmire from the charge of careless treatment brought against him by Clarence Hardy, McComb, Miss., and a resolution was offered to the effect that the society should join in the defense for the accused.

At Alexandria, the Sisters of Charity are planning to build a new $50,000 sanitarium.

At New Orleans, on Nov. 2, a school of midwifery was opened to be operated as a department of Lyola University.

At New Orleans, Dr. G. H. Tichenor has been elected Commander-in-Chief of the Louisiana Division of the United Confederate Veterans.

Dr. L. H. Levy, New Orleans, was married to Miss Jessie G. Burns, Hattiesburg, Miss., on November 11.

Dr. J. C. Cole, New Orleans, was married on Nov. 30 to Miss Betty Eastland, Chicago.

Deaths

Dr. J. M. Ledbetter, Shreveport, died in that City on Nov. 9 at the age of 63 years.

Dr. Robert Cunningham, Castile, died suddenly on Nov. 11.

MARYLAND

At Baltimore, the property to be purchased by the government for quarantine has been valued at $176,775 by the City and Federal appraisers. The money obtained will be used by the City in the purchase of a general municipal hospital in the city limits.

At Huntington, the physicians will go before the City Commission as favoring hospital zones.

According to a recent report of County Health Officer C. R. Scheller, there were between 400 and 500 cases of measles in Washington County.

At Baltimore, according to a recent announcement of the Board of Health, children who have not had a successful vaccination will not be allowed to attend the public schools.

Dr. H. W. Hodgson, La Vale, was reported painfully injured recently when his car overturned.

Dr. G. P. Grau, Highlandtown, was badly beaten recently by three men who held him up.

Dr. W. S. Love, Baltimore, while riding with his daughter, was painfuly though not seriously injured by being thrown from his car when it collided with a taxicab.

Deaths

Dr. L. A. Burk, of Frederick, died in a local hospital on Oct. 16 from cerebral hemorrhage.

MISSISSIPPI

At Jackson, Dr. E. B. Poole, County Health Officer, recently issued a letter through the papers warning the citizens against the buying of milk from the street peddlers.

According to the recent report of the Mississippi Board of Health, the sanitary conditions of the State are greatly improved, and it is noticed that pellagra is on the decrease.

At Crystal Springs, Dr. L. M. Damper, Sr., was painfully injured by a fall from his buggy.

Deaths

Dr. John Grady was burned to death in his home at Natchez on Nov. 12.

MISSOURI

At Kansas City, according to a recent report, there had been $180,000 raised in the campaign to secure funds for the erection of the Children's Mercy Hospital.

At Springfield, at a recent meeting of the Medical Association of Southwest Missouri, among the important resolutions which were passed was one endorsing the plan of removing the subject of therapeutics from the list of questions submitted to the candidates for licenses to practice in the State.

At Springfield, on Nov. 10, the forty-seventh annual meeting of the Southwest Missouri Medical Association was called to order by Dr. James H. Elliot, of White Plains, President.

At Merwin, Dr. J. J. Martin, who was shot recently by a railway agent, is reported to be in a critical condition.

Dr. Elizabeth E. Rusk and Mr. William Miles West, both of St. Louis, were married on Nov. 4.

Dr. Philip Skrainka, of St. Louis, has announced that he has resigned as Literary Editor of the Interstate Medical Journal and will become editor of a new monthly medical journal soon to be launched.

(Continued on page 30)

Obstinate Constipation of Infants and Young Children

is usually a dietetic affair, but is sometimes due to lack of muscular tone.

While **INTEROL** is neither a food nor a tonic, it is undoubtedly of service in these conditions because it supplies lubrication in the large bowel, facilitating both peristalsis and evacuation. Thus there is less likelihood of intestinal stasis with its resulting fermentation, putrefaction and autotoxemia.

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(Continued from page 28)

Deaths

Dr. E. W. Schauffler, aged 77 years, died at his home in Kansas City on Oct. 29. He acted as an interpreter in the Crimean War and was a veteran of the Civil War.

Dr. P. E. Spiron was found dead in his offices in Collinsville on Nov. 4.

Dr. Onas Smith, 33 years old, died at his home in Oak Grove on Nov. 15.

NORTH CAROLINA

At Wilmington, the Marine Hospital, which has been reopened under the charge of Dr. J. C. Wessell, will be used as a research station for pellagra.

At Asheville, the maternity and babies wards of the Biltmore Hospital were opened on Oct. 16.

Dr. Margaret C. Jones, of Goldsboro, was married on July 6 to Dr. S. B. Sturgis, of Philadelphia.

Deaths

Dr. H. H. Whittaker, 55 years of age, died suddenly at his home in Hilliardstown on Oct. 13.

Dr. W. C. Irby, Laurens, following a brief illness, died on Oct. 27.

OKLAHOMA

At Guthrie, the first of a series of meetings of the health officers of the State was called by Dr. John W. Duke, State Health Commissioner, on Nov. 16. The purpose of these meetings is to bring about closer co-operation in the health work of the State.

At Talihina, the new $50,000 Choctaw-Chickasaw Sanitarium was opened on Nov. 17.

At the recent meeting of the Oklahoma Medical Society, Dec. 28 was designated examination day for Oklahoma City and County.

At El Reno, Dr. F. H. Cook is reported to be recovering from a badly infected hand.

At Nowata, Dr. J. P. Suddeth was recently reported to be injured by being thrown from a horse which he was riding.

Deaths

Dr. Price Patterson, age 53, was shot and killed at Maysville by an Indian on Oct. 28.

SOUTH CAROLINA

At Columbia, at a recent meeting of the Board of Trustees of the Medical College of the State of South Carolina, it was decided that women would be allowed to matriculate.

At Greenville, on Nov. 20, there was held the annual meeting of the Southern Sociological Congress.

Sanitary Engineer R. E. Tarbett was in Spartenburg recently in connection with the field studies of pellagra which are being conducted by the United States Public Health Service.

Deaths

Dr. William C. Irby, Laurens, 68 years of age, died at his home in that City on Oct. 26.

Dr. William K. Griffin died at the home of his daughter in Marion on Sept. 28.

TEXAS

At Waco, during the recent "better babies" conference, a great number of babies were examined.

At Dallas, by a recent report of the City Health Officer, it is estimated that there are as many as 1,500 cases of tuberculosis in the City. This estimate is based upon the mortality from that disease.

At Hillsboro, Assistant Surgeon W. C. Witte, Assistant Epidemiologist C. C. Applewhite and Field Investigators Samuel Saunders, W. K. Sharp, Jr., and G. S. Bote have been at work recently in connection with the studies in rural sanitation in Hill County.

At Dallas, it has been announced that the name of the Texas Medical News has been changed to Medical Insurance and Health Conservation. Dr. M. M. Smith will remain with the editorial staff in the capacity of managing editor and has announced that the price of the new periodical will be two dolars per year.

Deaths

Dr. C. W. Hogsett, Fort Worth, died in that City on Nov. 27.

Dr. Robert C. Westphal, age 46, a resident of Yorktown, died in Cuero on Oct. 21.

Dr. Henry K. Leake died at his home in Dallas on Oct. 29.

Dr. Neal L. Burgess died at his home in Sumner on Nov. 1 from cerebral hemorrhage.

TENNESSEE

At Franklin, during the meeting of the Middle Tennessee Medical Association, which convened on Nov. 16, the following officers were elected: President, Dr. Olin West, Nashville; Vice President, Dr. R. C. Nolin; and Dr. Jack Witherspoon was re-elected Secretary-Treasurer. The next meeting of the Asssociation will be held in Fayetteville.

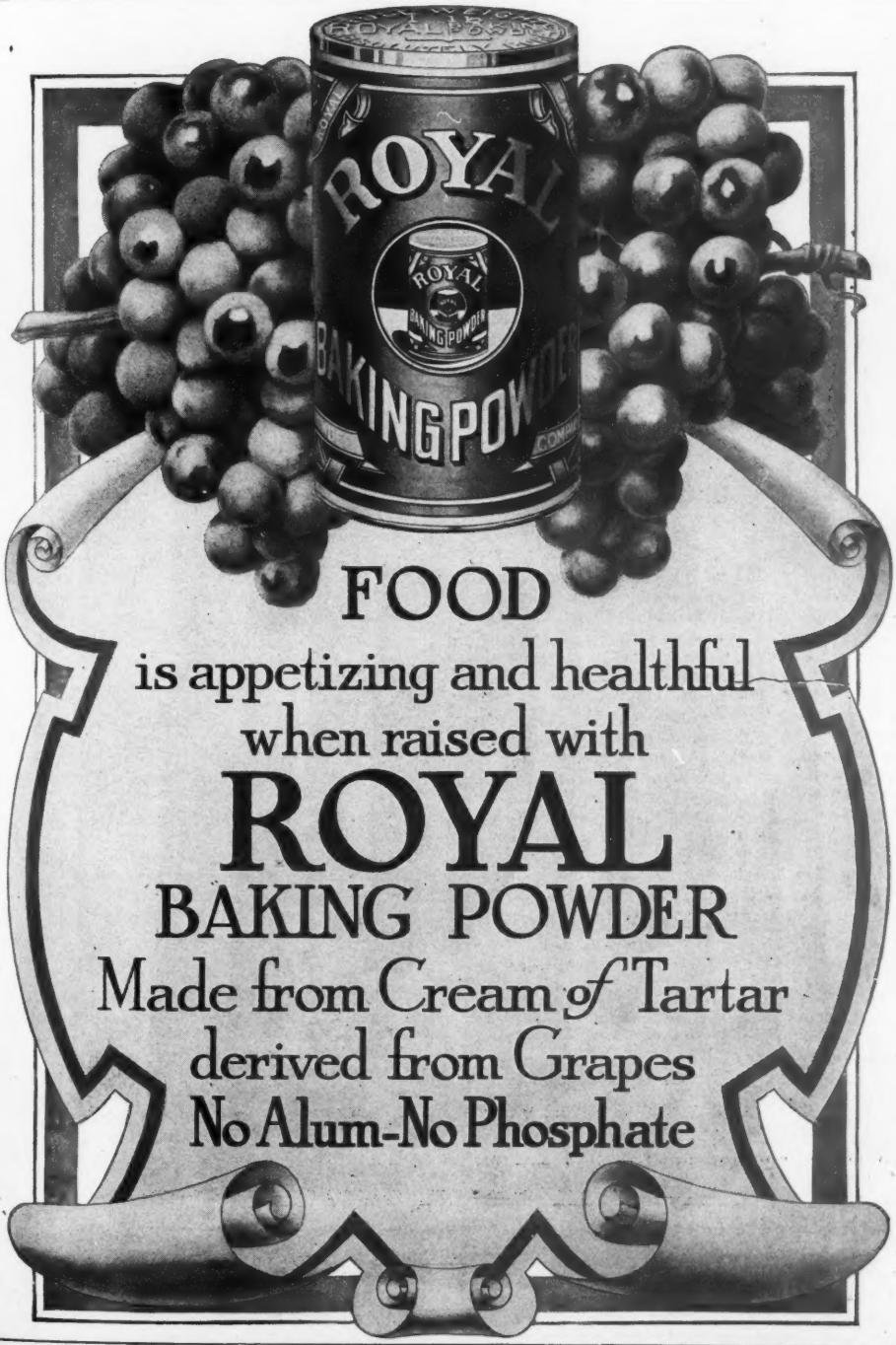
At Memphis, on Nov. 21, there was held the annual meeting of the Tri-States Medical Association of Mississippi, Tennessee and Arkansas. The following officers were elected for the ensuing two years: President, Dr. J. W. Gray, Clarksdale, Miss.; Vice President for Arkansas, Dr. Floyd Webb, of Turrell; Vice President for Tennessee, Dr. R. W. Griffin, of Tiptonville; Vice President for Mississippi, Dr. Rogers Hays, North Carrollton; Dr. J. L. Andrews, Memphis, was re-elected Secretary, and Dr. J. A. Vaughan, of Memphis, was re-elected Treasurer.

At Nashville, Dr. W. Scott, of Cookville, has been elected to the office of Superintendent for the Central Hospital for the Insane.

At Nashville, recently, the State Board of Health was investigated by representatives from the Division of Vital Statistics of the United States Census Bureau for the purpose of ascertaining whether the State is eligible for admission to the registration area.

At Memphis, Dr. S. C. Frost has been placed under arrest, charged with assault with intent to kill his son-in-law, Ceril Oustler, of that City.

(Continued on page 32)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(Continued from page 30)

At Nashville, there has been reported a rather serious epidemic of diphtheria and measles.

Deaths

Dr. I. A. Dial, aged 60, died at his home near Union Cross Roads on Oct. 29.

Dr. W. G. Frierson, aged 41, died at his home in Shelbyville on Oct .21.

Dr. David L. Howell, aged 59, a practitioner of Big Rock, died at his home near Legate on October 17.

Dr. James M. Coyle, aged 66, died at his home in Nashville on Oct. 21.

VIRGINIA

At Norfolk, on Oct. 24 to 27, there was held the forty-seventh annual meeting of the Medical Society of Virginia, Dr. Joseph A. White, Richmond, presiding. The officers for the ensuing year were elected as follows: Dr. G. A. Stover, South Boston, President; Vice Presidents, Drs. C. S. Webb, Bowling Green; A. L. Tynes, Staunton, and W. B. Barham, Newsoms; Dr. P. A. Irving, Farmville, was re-elected Secretary, and Dr. M. W. Peyser, Richmond, re-elected Treasurer. Roanoke was selected as the next place of meeting.

At Richmond, acting upon the suggestion adopted by the National Association for the Prevention of Tuberculosis, the Academy of Medicine appointed physicians to assume charge of twelve stations over the City where patients were examined for signs of the disease on Dec. 6.

According to a recent ruling, tuberculous patients who expectorate in public places, vehicles, etc., or otherwise willfully expose others to infection, will be detained in some suitable place for a period not exceeding one year.

At Richmond, by a request of Dr. E. C. Levy, a $600 house will be built on the City Farm for the detention of George Hodges, the Greek leper confined there.

Dr. J. Shelton Horsley, Richmond, was awarded a medal in recognition of his original work in the surgery of the blood vessels and intestines by the Southern Medical Association at its recent meeting in Atlanta.

Deaths

Dr. Fenton D. Drewry, 39 years of age, a practitioner of Virginialina, died on Oct. 29 following an operation for appendicitis at Norfolk.

Dr. W. J. Hoskins, who died in El Paso, Tex., recently, was buried in Roanoke on Oct. 28.

Dr. L. E. Gott, Falls Church, a veteran of the Civil War, died in Washington on Oct. 29.

Dr. William P. Brock, aged 81, Richmond, died at his home in that City on Oct. 19.

Dr. Isaac R .Godwin died at his home in Fincastle on Oct. 1 at the age of 79 years.

Dr. E. J. Haller died suddenly at his home at Marion on Oct. 10.

Dr. David Clayton, aged 84, died at his home in Bedford City on Nov. 16.

WEST VIRGINIA

Field Investigator W. K. Sharp, U. S. P. H. S., made a survey of sanitary conditions in Burkeley County recently.

At Fairmont, there was recently formed a new society for the study of medical subjects. The name of the new organization is the Lewellys F. Barker Society for the Study of Medicine. Physicians in good standing are eligible.

Deaths

Dr. James F. Gardner died on Nov. 11 from the effects of a fractured skull. He was thrown from his automobile when it turned turtle near Winchester. He was a retired practitioner of Capon Bridge and a Confederate veteran.

Dr. F. S. Roberts, Glencoe, Ohio, at one time a practitioner of Wheeling, was instantly killed on Oct. 26 when his automobile was struck by a B. and O. fast passenger train.

Dr. A. J. Woofter, aged 62, was instantly killed on Sept. 21 when he was run over by a train at Weston.

PLACEBOES

A Close Second

"I heard today that your son was an undertaker. I thought you told me he was a physician."

"Not at all."

"I don't like to contradict, but I'm positive you did say so."

"You misunderstood me, I'm sure. I said he followed the medical profession."—Tid-Bits.

A Simple Remedy

A Chinaman was asked if there were good doctors in China.

"Good doctors!" he exclaimed. "China have best doctors in world. Hang Chang one good doctor; he great; save life, to me."

"You don't say so! How was that?"

"Me velly bad," he said. "Me callee Doctor Han Kon. Give some medicine. Get velly, velly ill. Me callee Doctor San Sing. Give more medicine. Me glow worse—go die. Blimebly callee Doctor Hang Chang. He got no time; no come. Save life."—Tid-Bits.

Having a Heart

"Did the doctor give you much encouragement?"

"Sure."

"Said you would soon get well?"

"No. But he told me I could pay his bill when I got the money."—Birmingham Age-Herald.

(Continued on page 34)

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Chicago (1484)

(Continued from page 32)

Saws Reset

"There's one thing that's certain,"
Says old Mr. Peck;
"A boil on the stove is
Worth two on the neck."
—Cincinnati Enquirer.

Said young Mr. Duffer,
A gay dog is he:
"A 'peach' in the lap
Is worth two on a tree."
—Birmingham Age-Herald.

And old Uncle Bing
I distinctly heard mutter,
"A hair on the head
Is worth two in the butter."
—Judge.

I said to the waiter,
That slow, awkward goop,
"A thumb on your hand
Is worth two in the soup."
—St. Louis Star.

We, too, raised a holler
And smashed at the screen;
"A fly 'neath the swatter
Is worth two on the bean."
—Pittsburg Post.

In re a sick patient
Whom nothing could save,
"A patient in bed
Is worth two in the grave."

Mostly Water

A druggist had a violent dispute with his wife, who finally gave way to tears.

"Your tears do not affect me in the least," he said. "I have analyzed them and they contain a little phosphate of calcium and a little chloride of sodium. The rest is only water."—Gaietes de la Medecine.

You Don't Mean It

"I heard a flattering compliment of you. But I'm afraid it would quite turn your head."

"Do tell me, please."

"Well, I heard Jack say you had such a-cute indigestion."

Mutual Attraction

"So the telephone operator in the hospital is going to marry the surgeon."

"So I hear."

"Affinity of tastes, I suppose. She cuts people off and he cuts 'em up."—Baltimore American.

Force of Habit

An interesting event occurred in the household of a Columbia professor not long ago. This professor, by the way, is very absent-minded.

The new arrival was announced by the nurse to the professor, who chanced at the time to be in his study, very much absorbed in some abstruse calculation.

"Professor," said the nurse, very proudly, "it's a little boy."

The professor looked up half-understandingly. "Well," said he, "ask him what he wants."—Harper's.

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THE symposia which have previously appeared in the pages of the MEDICAL REVIEW OF REVIEWS—*the Symposium on Euthanasia, Symposium on Sterilization of the Unfit, Symposium on Drugs,* and *Symposium on Obstetrical Abnormalities*—were features of interest and value, but the symposium which is to appear in our January issue will be unique. It is a *Symposium on the Medical Profession,* with contributions from distinguished laymen. "Whats the matter with the doctor?" is the question that was propounded, and replies were received from such men of affairs as **Andrew Carnegie, John Wanamaker, Nathan Straus, Theodore N. Vail;** from such authors as **Jerome K. Jerome, Israel Zangwill,** the **Princess Troubetzkoy, William Dean Howells, Gertrude Atherton, Robert W. Chambers, Alice Hegan Rice, Margaret Deland, Theodore Dreiser, George W. Cable, Julian Hawthorne, Ellis Parker Butler, Bruno Lessing, Booth Tarkington, George Kennan, Ernest Thompson Seton;** from such poets as **Edith M. Thomas, Bliss Carman, Rose Hartwick Thorpe, Wallace Irwin, Witter Bynner, John Kendrick Bangs,** (these last two contributions being in verse) ; from such folks of the stage as **Minnie Maddern Fiske, Wilton Lackaye, James K. Hackett, William C. de Mille, Charles Rann Kennedy, Eugene Walter, John Philip Sousa;** from such educators as **Andrew D. White, David Starr Jordan, E. Benjamin Andrews,** the late **Booker T. Washington, Charles F. Thwing;** from such inventors as **Nikola Tesla** and **Hudson Maxim;** and from editors, politicians, cartoonists, theologians, *et al.,* thruout the world.

Many of these contributions are literary gems from world-famed masters of the pen, and we believe they will be quoted for years to come.

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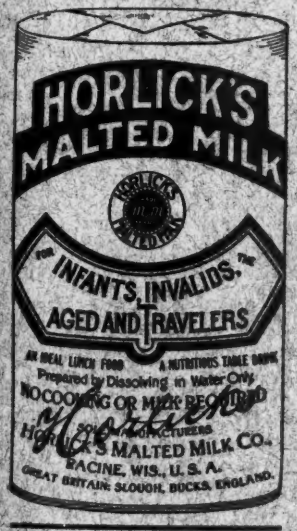
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